DEC. 18 1959

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

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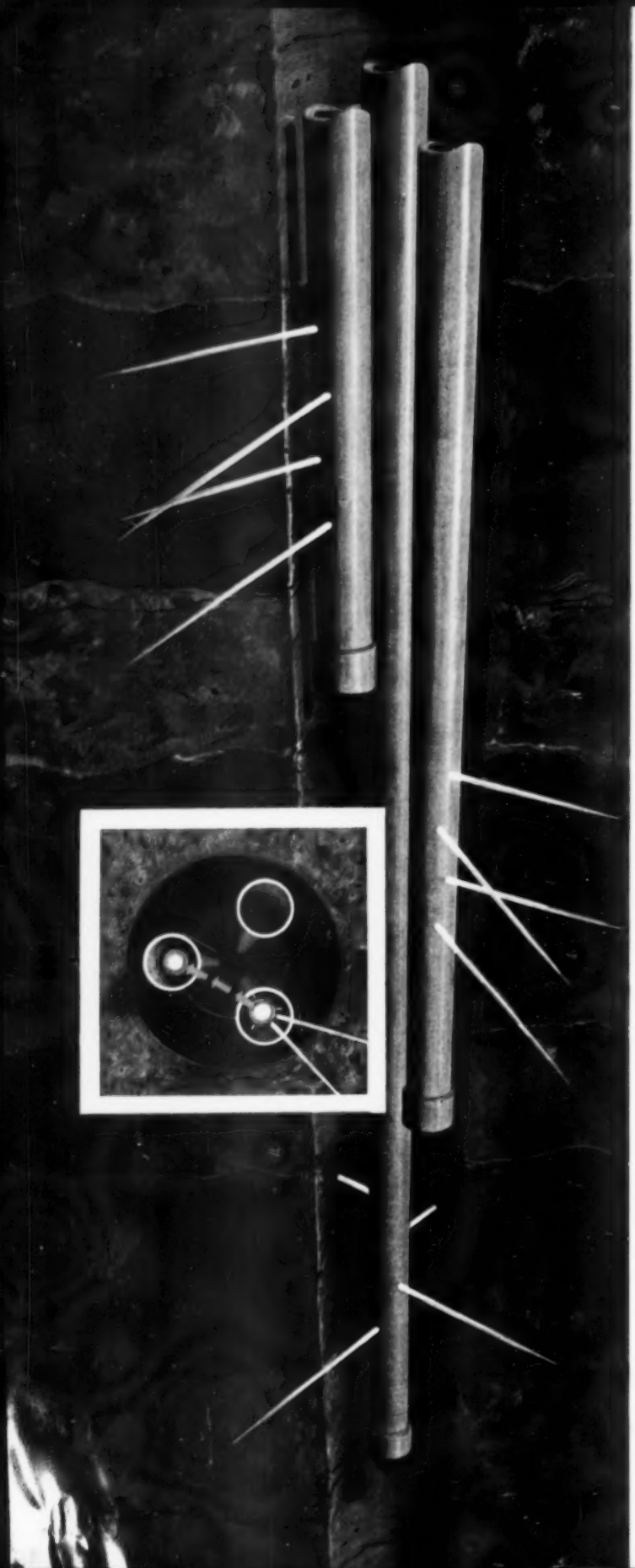

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The future of the industry depends on the introduction of techniques and equipment that reduce the cost of producing oil. You can depend on Schlumberger to keep pace with services which, like Oriented Perforating, contribute to further progress and economy.

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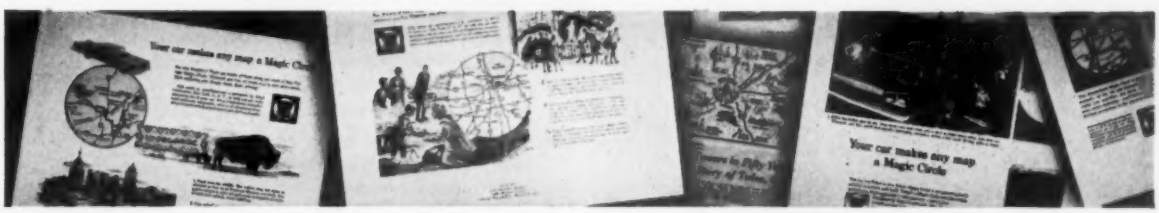

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INSIDE *Slant*

IT'S NEVER TOO LATE

Quite a number of the oil states do not have adequate conservation laws, but few will admit that this has caused dissipation of natural resources.

An exception is Pennsylvania, birthplace of the U.S. oil industry.

At the recent meeting of the Interstate Oil Compact Commission in Philadelphia, Governor David L. Lawrence said he was sorry to say that Pennsylvania has yet to join those states with adequate oil conservation laws.

"Who knows," said the governor, "what the oil production figures for Pennsylvania would have been in those early years if the Interstate Oil Compact Commission had been in existence, and if the policies it fosters had been practiced."

Pennsylvania has no laws on spacing and production. Its existing laws relate only to abandonment of wells and filing of reports on new wells.

Governor Lawrence told the commission that the pioneers in Pennsylvania did more than start a new industry. They demonstrated what uncontrolled exploitation of a resource means over the decades—a loss in efficiency and waste of a resource.

It isn't too late for other states to take heed.

LeRoy Menzing
EDITOR

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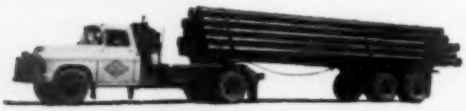

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DEPT/Opinions

Views That

"One of the real dangers in our present situation is that we may seek the short-term solution. We may seek to cut imports rather than strive to keep our exports competitive.

"A major interest of the U.S. is a high level of world trade. It would be tragic, indeed, if after leading the world over the past 20 years in the direction of a more competitive international trading system, we were to now put aside the traditional principles which we have been vigorously preaching.

"All of us believe in competition. Competition, both nationally and internationally, results in occasional stresses. But we cannot have our cake and eat it, too. We cannot have the benefits of free competition without the stresses and strains that go with it. And that is true in respect of both the national and international market."

—EUGENE HOLMAN
Chairman
Standard Oil Co. (N.J.)

"The economics of developing additional production in most areas of Western Canada continues to be most attractive for individual companies on a rate-of-return and payout basis. Discoveries such as the Swan Hills area demonstrate that exploration is still potentially the most rewarding investment the industry can make."

—J. R. YARNELL
Treasurer
British American Oil Co., Ltd.

"It has long been a tenet of economic faith with me that among reasonable men there is no problem that cannot be resolved by open and frank discussion if, and only if, each approaches the matter in reason and with the same honest desire to find a solution. The sole alternative is a planned and controlled economy, and the choice rests with labor and management. The place to begin is in the plant—and the time is now."

—MILLARD E. STONE
Vice-president
Sinclair Oil Corp.

"Continued growth in petroleum consumption throughout the free world is anticipated, but new sources of supply, increased competition from natural gas, and various other factors will probably maintain a weak price structure for petroleum."

—INVESTMENT BANKERS ASSN.
Oil, natural gas securities committee

"We miss the boat—often failing to capitalize on the fluidity of our pric-

Make News . . .

ing, and in not publicizing the down move. This puts us in the position of having to defend the up move each fall because the public regards it as a price increase rather than a price restoration."

—LEN S. MARSHMAN
Manager, wholesale planning department
Mobil Oil Co.

"Prejudice is a great timesaver; you don't have to wait for the facts to make up your mind."

—DR. HARVEY L. VREDENBURG
Iowa State University

. . . and Letters

Dear Sir:

In your "Upsurge Helps Western Canada's Oil" [PW—Dec.4'59,p17], you do some fascinating things with numbers. We see that "companies expect to deliver 500-billion cu. ft. by Dec. 31. This will be 20% greater than in 1958, and more than double the previous high, set in 1956."

I would like to see the sequence of numbers from which you derived the combination of "20% greater than 1958" and "more than double the previous high in 1956."

Perhaps you infer that 1958 was the high before 1959, and that 1956 was the high previous to 1958; if so your phrasing could have been clearer. If this is not the sequence, your computer and my slide rule give different answers.

I don't know how it is done, but would like to learn. Could come in handy, you know.

M. EHRLICH
Research director
American Lubricants, Inc.

• How right you are. What we intended to say was that 1959's gas production would be double that of 1956. But somehow we managed to slip in an incorrect reference to "the previous high." Don't fret about your slide rule. It was more accurate, in this case, than our interpolation.

PETROLEUM WEEK *will publish each week comments from readers on timely, pertinent subjects. Such expressions are welcome.*

Address all such correspondence to LeRoy Menzing, Editor, PETROLEUM WEEK, *330 W. 42nd St., New York 36, N.Y.*

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Tuition Supplements—

One Good Way To Help Our Colleges And Universities

The business community has made an impressive start in going to the desperately needed financial aid of our colleges and universities. Business contributions to higher education have increased from only $40 million in 1950 to $136 million in 1958.

This rise in financial aid to higher education should be a great source of satisfaction to the business community. But it goes only part way toward meeting the growing needs of colleges and universities for financial help. Over the next ten years business aid to our privately supported colleges and universities alone must increase to at least $500 million a year merely to provide decent faculty salaries and meet the increased operating costs of taking care of enrollments that will almost double.

One pervasive reason why many business firms have not joined the ranks of the companies contributing to higher education seems to be that, in the interest of prestige and public relations, they are making their provision of aid contingent upon finding some particularly novel way of providing it. So long as this point of view persists, business aid will lag, for there are simply not enough ways of providing financial aid that are both notably novel and sensible.*

How The Plan Works

There are, however, some well-tested ways of providing aid which improve rather than fade in appeal with more using. One such way is the making of supplemental tuition payments to colleges and universities at which a company's employees take courses.

Many companies have scholarship or tuition-refund programs which cover all or part of the costs to their *employees* of taking college courses. But, in most colleges and universities, tuition charges fall far short of covering the full cost of the education given. By making an unrestricted "cost-of-education" grant a part of their employee scholarship or tuition-refund plans, these companies could make a material contribution toward covering the *college's* full costs as well.

The tuition supplement can be a fixed amount or a percentage of the tuition charged. Some plans provide for supplements as high as 100% of tuition, though there is usually an upper limit to the total supplemental payment given for each employee enrolled in the institution.

The plan seems to have originated with the Ford Motor Company Fund. When we at McGraw-Hill first learned of it, it appealed to us as having so many advantages, and so few disadvantages, that we adopted it as one part of our own program of financial aid.

---

*The efforts of the McGraw-Hill Publishing Company to find a suitable method of aiding higher education prompted the writing of a "more or less Socratic dialog" entitled *A Business Wrestling with the Problem of Aid to Colleges and Universities*. Copies of this pamphlet, which underlines the difficulty of finding both a novel and satisfactory method of providing aid, are available on request.

HOW THE HEADS OF SOME OF THE INSTITUTIONS TO WHICH McGRAW-HILL HAS MADE GRANTS FEEL ABOUT THE TUITION SUPPLEMENT PLAN

"We are pleased not only because this addition to the never adequate supply of non-earmarked funds is a most welcome one, but also because it attests to the fact that the employees of our neighboring business firms are benefiting from the courses we offer at times convenient for them. We hope this mutually beneficial plan may continue and grow with the years."

Grayson Kirk, President
Columbia University

"I shall take this occasion to express deep sentiments of appreciation, in my own name and in the name of the members of the Board of Trustees, for the very effective manner in which your corporation is aiding higher education by the payments made under your tuition supplement plan. Certainly your action is indicative of the fact that you realize industry and higher education must join forces to preserve the basic American system of free enterprise."

Very Reverend John A. Flynn, C.M.
President, St. John's University

"The growing recognition by business and industry of the financial needs and important services rendered to the community by the colleges and universities is most encouraging, and Temple University is deeply appreciative of the fine support extended through McGraw-Hill's program of supplementary grants."

Robert L. Johnson, President
Temple University

The Plan's Advantages

The main advantages of the tuition supplement plan are:

- **It is simple and easily administered.** Payments can be made when scholarships or tuition refunds are granted, or at another time convenient to the company.
- **It relieves the company of the difficult and sometimes disagreeable task of choosing one college rather than another.** The individual employee makes the choice.
- **It directly serves the interest of the company by encouraging and aiding the institutions where its employees take courses.** In a sense, the company makes contributions in direct proportion to the value it receives in education for its employees.
- **It directly serves the interest of the colleges and universities receiving the grants by getting money to them in the form most appreciated**—unrestricted funds to be used at the discretion of their administrators.

Largely because tuition supplements are unrestricted as to use, this plan enjoys the unqualified approval and gratitude of the schools receiving such aid. This is not true of some of the other plans for granting aid to colleges and universities.

Tuition supplements, of course, can't be regarded as large efforts relative to the need of higher education and the responsibilities of business. But they are a very practical and useful first step, involving almost no problems. If you are not familiar with the idea of supplemental grants, why not discuss it with some of your friends in the field of higher education?

The Price Of Novelty

Our experience with tuition supplements indicates that this is an excellent plan, and we are glad to recommend it to other companies looking for an effective method of providing financial aid to higher education.

At any rate, we hope that business firms will not postpone granting financial aid until they find some novel way of doing it. If they do, it will be another case of too little and too late.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nation-wide developments. Permission is freely extended to newspapers, groups or individuals to quote or reprint all or parts of the text.

Donald C. McGraw
PRESIDENT
McGRAW-HILL PUBLISHING COMPANY, INC.

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Aerial photo (left) shows the Sohio Petroleum Co.'s EOT-Johnston pump installations. Located on the banks of the Atchafalaya River in the St. Martin Parish, La.; the two units are driven by one 84 h.p. prime mover using gas from the wellhead. The two pumping units are 1000 feet apart in this remote location.

EOT

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60-Second Summary / WHAT'S HAPPENING IN OIL

December 18, 1959

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Total imports into the U.S. will go up nearly 110,000 b/d, to an average of 1,727,566 b/d, in the first half of 1960. The "quota" imports will amount to 1,446,566 b/d, with the remainder consisting of exempt crude and products. . . . p. 15

•

There's money to be made in salvaging equipment and pipe from depleted and abandoned wells. It's a growing business, and even such big firms as National Supply Co. are in it now. . . . p. 25

•

France's desire for preferential treatment for Sahara crude in the European Common Market will complicate the world oversupply. If the government has its way, it would supply over 50% of the Common Market's oil needs by 1965-67. . . . p. 20

•

The more lube jobs a service station handles, the more TBA items it'll sell. A Midwest merchandise manager says flatly that there's a definite correlation between lube services and TBA sales. . . . p. 62

•

Egypt is stepping up its exploration and development operations. The government-owned General Petroleum Co. has increased its 1960 budget to $11.2-million, double the current total. . . . p. 56

•

The chances look good for an increased flow of Canadian gas into the Pacific Northwest. Both the Canadian and U.S. governments are expected to approve a proposed 1,353-mi. pipeline from Alberta to San Francisco. . . . p. 48

•

High-speed turbo-expanders are being used for the first time in a helium extraction plant. They're aiding output by providing faster and more efficient refrigeration. . . . p. 42

•

French companies with Sahara production are negotiating with Caltex for control of its outlets in France. Included would be the company's refining and distribution facilities. . . . p. 18

•

50,000-ft. holes can be drilled with present equipment. But production from that depth presents an even greater mechanical challenge, according to a three-man panel of specialists who explored the subject. . . . p. 30

•

Sprayed heat-diffused aluminum coatings are helping refiners fight sulfide scaling. They're being used in relatively large vessels, such as reactors of desulfurizing units. . . . p. 44

Up to the Minute

SIGNIFICANT LATE NEWS

AT-A-GLANCE PETROLEUM WEEK

December 18, 1959

The Commerce Dept. foresees a brighter year in 1960 for the drilling branch of the industry. Its prediction: "In 1960, the industry should make a limited recovery from excessive oil supplies, the slump in drilling, and the downward trend of prices in face of rising costs at the contractual level."

Dollar sales of drilling equipment are expected to rise by 16% over 1959. The reasons, the department said this week, are: (1) a rising domestic demand for oil; (2) an anticipated 2.9% gain in well completions to "slightly more than 52,000"; (3) many formerly idle rigs are now active; and (4) about 65% of the 3,400 rotary rigs are over-aged and subject to replacement or repair.

•

The Federal Power Commission will be asked to approve a Rocky Mountain gas contract calling for an initial price of 18½¢ per Mcf. It was signed this week by Belco Petroleum Corp. and Pacific Northwest Pipeline Corp., and provides also for three 1¢ escalations at five-year intervals. The contract is for 300-billion cu. ft. of southwest Wyoming gas, destined for Washington, Oregon, and Idaho. A second 20-year contract dedicates 700-billion cu. ft. for Southern California, but it is contingent on FPC approval of a proposed pipeline from Rock Springs (Wyo.) to the West Coast. Belco officials estimate the value of the contracts in excess of $200-million.

•

Another Sahara venture is in the works, with one German and two French firms concurring in a three-way exploration deal. They are Wintershall A.G., Franco Africaine de Recherches Petrolieres (Francarep), and Soc. de Participations Petrolieres (Petropar). The agreement involves concessions both held and applied for by Francarep. These are the Sekaifaf Hassi Farida concessions, located about 60 mi. west of Edjeleh field.

•

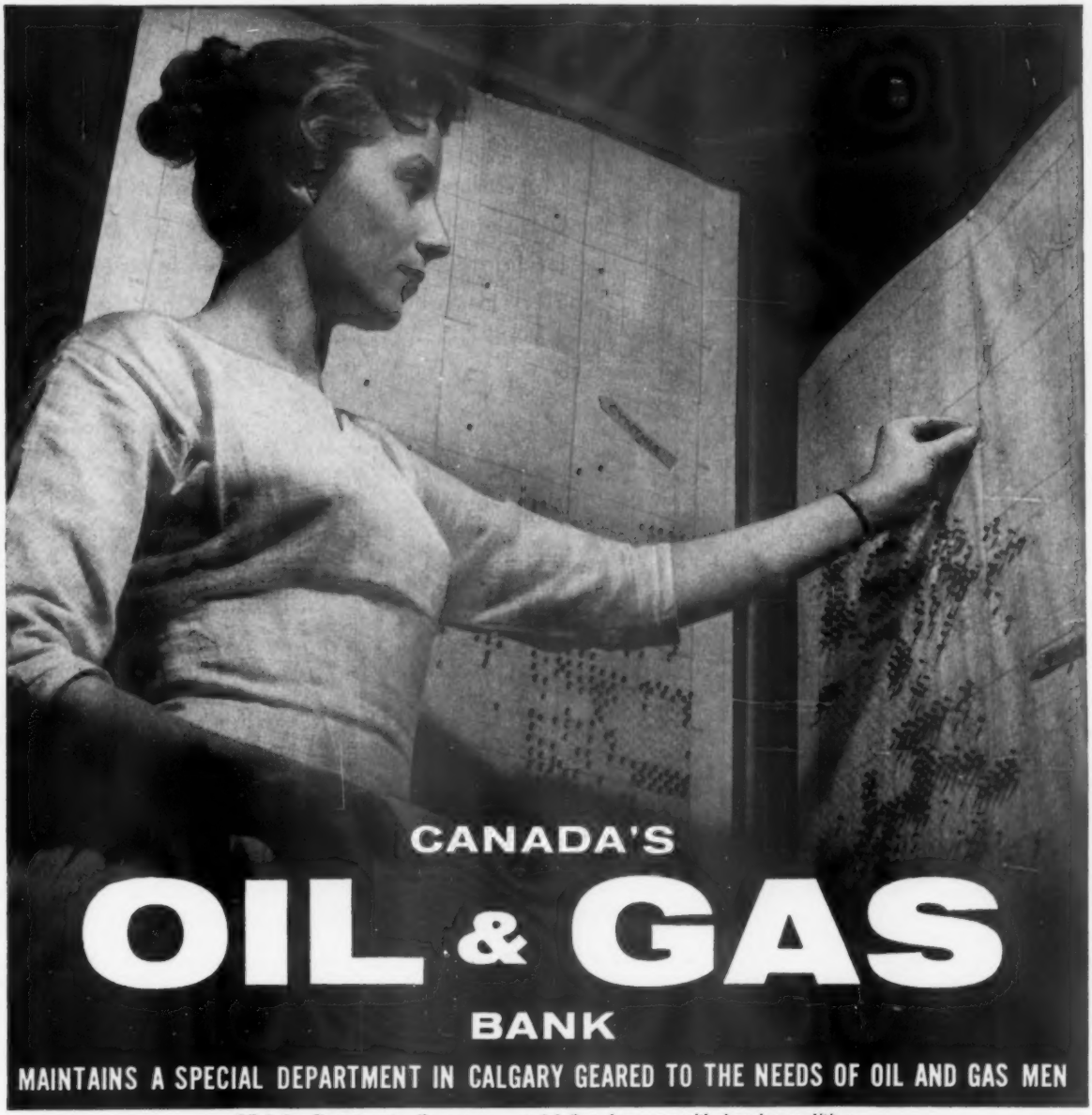
A "sweeping congressional investigation" of the Federal Power Commission is threatened by Rep. Ken Hechler (D., W.Va.). At an FPC hearing on a $24-million rate increase sought by Tennessee Gas Transmission Co., Hechler charged that the commission "has failed to achieve its objective of protecting the public interest." He claimed that independent producer prices for natural gas have almost doubled between 1954 and 1958. This, he contended, indicates "the absence of a constructive regulatory policy."

•

Importers will be required to report exchanges of foreign crude for domestic on a standard one-page form. The new form, mailed out by the Interior Dept. this week, is designed to speed the processing of exchange agreements.

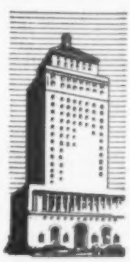
•

E. D. Brockett, president of British American Oil Co., Ltd., will become executive vice-president of Gulf Oil Corp. Jan. 1. The position has been vacant since October, when R. O. Rhoades was elected chairman.



Oil & Gas Department well maps are posted daily to keep pace with changing conditions.

The officers who staff our Oil and Gas Department in Calgary are "oil bankers" in every sense of the word. By experience and training, and through a specialized knowledge of the business, they are exceptionally well qualified to facilitate and co-ordinate the many services called for by this fast growing Canadian industry.



Among other facilities, this department offers special bulletins designed to provide up-to-date information on regulations, tariffs, financing, basic statistics and other kindred subjects. For a list of the latest available Oil and Gas bulletins, you are invited to write to The Royal Bank of Canada, Oil and Gas Department, 409 Eighth Ave. W., Calgary, Alta.

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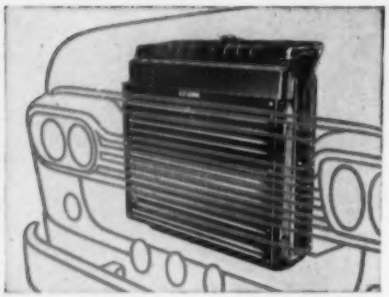
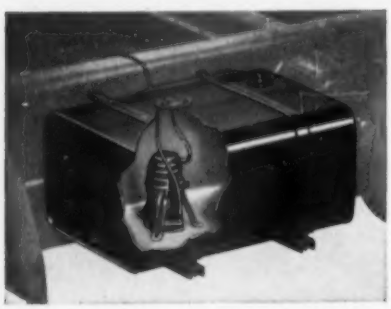


CLOSER TEMPERATURE CONTROL obtained with automatic radiator shutters means longer engine life, more efficient operation. Temperature variation between 167° and 187° with shutters as compared to 102° to 181° without shutters was reported and certified in loaded vehicle road tests.

LONGER WIRING HARNESS LIFE is the direct result of Ford's greatly improved electrical wiring system for 1960. Ford's '60 wiring harness and the 1959 wiring harness were subjected to shaker table tests plus constant exposure to oil and water vapors, and temperatures of 200°. Certified test results show a threefold increase in 1960 wiring harness life.



INCREASED FUEL PUMP RELIABILITY is an added benefit from Ford's submerged-type electric fuel pump. Certified results of dynamometer tests showed no vapor lock with Ford's electric pumps at temperatures up to 200°, whereas incipient vapor lock with mechanical fuel pump resulted in a power loss of 9% under same conditions.

It's a fact! Numerous reports from high-mileage operators of Super Duty Trucks attest to Ford's outstanding durability. Studies by an independent research firm provide certified proof that these models are even more durable for 1960.

Ford Super Duty Trucks have earned a reputation for exceptional performance and durability since their introduction two years ago. Shop service records of many leading fleets show Super Duty tractors with mileage readings between 150,000 and 250,000 and no repairs other than normal maintenance. Similar testimony to the dependability of these Big V's by other satisfied users is being added each month. Is it any wonder that '59 sales of these units were more than double those of 1958?

And for 1960, the Ford Super Duties offer additional refinements. Bigger optional axles and increased GVW's to permit greater payloads and more profitable operation. Automatic radiator shutters to keep the engine temperatures within the most efficient operating range, improved submerged-type electric fuel pumps to prevent vapor lock, and redesigned wiring for more reliable operation are typical of the improvements to be found in these units.

The changes offered for 1960 were tested and evaluated by a leading research organization. Certified results of the studies by this impartial firm (name available on request) provide proof that Ford's Super Duty Trucks are even more dependable.

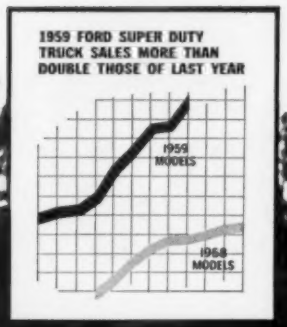
- **Certified Durability through closer temperature control!** Independent research engineers certify that Ford's thermostatically controlled radiator shutters kept water temperature between 167° and 187° in severe mountain grade operation. The test truck with shutters blocked open under same operating conditions had a temperature range from 102° to 181°. The temperature variation of only 20° with shutters means less expansion and contraction in block and heads. Higher, more constant temperatures permit oil to circulate more freely, reducing internal friction. All these factors contribute to longer engine life.

- **Certified Reliability with longer-lived electrical system!** Thicker insulation on wires resists deterioration by heat, oil and gasoline. Asphalt-impregnated loom and plastic-coated mounting clips protect against abrasion. Certified results prove that the 1960 wiring harness has three times longer life.

- **Certified Reliability with Ford's submerged-type electric fuel pump!** Dynamometer tests of engines with submerged-type electric fuel pump and conventional mechanical type showed that vapor lock was non-existent with Ford's electric pumps at temperatures up to 200°, whereas incipient vapor lock with mechanical pump resulted in a power loss of 9% at an underhood temperature of 200°.

Endurance tests were run on alternators, two-speed axle speedometer adapters and other related components with similar results. Get all the facts at your Ford Dealer's now!

in Ford Super Duties!



"Our first Ford C-1000 tractor has logged 190,000 trouble-free miles since March of '58,"

says Robey W. Estes, Vice President and General Manager of Estes Express Lines, Richmond, Va. "We haven't had a single road failure and we only bring it into the shop for regular preventive maintenance work once a month.

"We use the 477 engine and find oil consumption is exceedingly low . . . only one or two quarts added between 3000-mile oil changes. Engine compression at 190,000 miles is still high and fairly equal and our drivers say that power and pep are at about the same level as when the truck had been run only 60,000 miles.

"We are grossing between 52 and 56,800 pounds with our Ford Tilts. They are giving about the same gas economy and better oil mileage than other makes in our fleet. We bought our fourth Ford C-1000 tractor last month and hope to add more soon."

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Total Imports to Rise 110,000 b/d

Total imports of crude and products—controlled and exempt—into the U.S. are expected to average 1,727,566 b/d in the first six months of 1960, a gain of nearly 110,000 b/d over the last half of 1959.

That's the indications from the new allocations set by the Interior Dept., plus the anticipated imports of crude and products exempt from regulation under the mandatory program.

The allocations, announced this week by Interior Secretary Fred Seaton, total 1,446,566 b/d into the continental U.S., an increase of 83,377 b/d over the July-December period of this year.

The additional volume of exempt imports expected next year (table, right) includes Canadian crude into the Midwest and Puget Sound areas, bonded residual and distillates, and some light products, primarily from Puerto Rico.

An additional 83,377 b/d of imports were allocated to Puerto Rico, including 80,883 b/d of crude and unfinished oils, 2,140 b/d of residual fuel oil, and 354 b/d of light products.

All of the increased allocations to the continental U.S. were set for the areas east of the Rockies, Districts I-IV.

These districts' allocations of crude, unfinished oils, residual, and light products for the first six months of 1960 will average 1,219,718, a gain of 96,947 b/d over present quotas.

The 35,380 b/d gain in allocations of crude and unfinished oils for the east of Rockies districts (plus the unchanged quota of light products) was based on 9% of the Bureau of Mines' estimate of total demand in Districts I-IV.

The bureau's demand forecast of 8,837,000 b/d for the first half of 1960 in those districts represents a gain of 5% over the actual demand in the first half of 1959.

Because of the higher anticipated demand, and the resultant increase in crude and unfinished oils imports into the area, the refinery input percentages on which individual allocations are based were increased slightly (table, below, left).

The most significant increase in allocations east of the Rockies was for residual fuel oil, with the total boosted by 61,567 b/d to 425,000 b/d. That increase drew considerable criticism from the National Coal Policy Conference.

The latter group, composed of coal producers, coal-carrying railroads, and the United Mine Workers, succeeded in holding up the issuance of the allocations for the first half of 1960 while its leaders conferred with Secretary Seaton on the level of resid imports (page 68).

The group also was able to talk top government officials into reducing the level of residual imports that had been planned.

Matthew V. Carson, Jr., the imports administrator, had recommended to top Interior Dept. officials that import allocations for residual fuel oil be increased by 100,000 b/d initially over the 363,433 b/d permitted in the last half of 1959. Carson also recommended that, if necessary, resid import allocations should be raised by another 100,000 b/d at some time later during the winter, if demand warranted the increase.

Early in December, Joseph E.

Mandatory controls undoubtedly have curtailed imports, but exemptions keep totals high.

(Barrels daily)

	First Half 1959*	Second Half 1959	First Half 1960
EAST OF ROCKIES			
Crude and Unfinished Oils	759,000	682,707	718,087
Light Products	221,000	76,631	76,631
Residual Fuel Oil	604,000	363,433	425,000
Exempt Canadian Crude..		**57,000**	**80,000**
Bonded Residual Fuel.....	**100,000**	**107,000**	**115,000**
Other Exempt Products....		**35,000**	**35,000**
WEST COAST			
Crude and Unfinished Oils	201,000	233,310	220,095
Products	21,000	10,619	6,753
Exempt Canadian Crude..		**50,000**	**60,000**
Total U.S.	1,906,000	1,617,700	1,727,566

Includes the voluntary and the mandatory control period.

EAST OF THE ROCKIES, the refinery run-formula starting Jan. 1 will be increased to:

Average Runs Thousands b/d	% of Runs New	Old
0-10	13.0%	11.4%
10-20	11.9	10.4
20-30	10.8	9.5
30-60	9.7	8.5
60-100	8.7	7.6
100-150	7.5	6.6
150-200	6.5	5.7
200-300	5.3	4.7
Over 300	4.3	3.8

WEST OF THE ROCKIES, the refinery run-formula starting Jan. 1 will be reduced to:

Average Runs Thousands b/d	% of Runs New	Old
0-10	35.4%	37.5%
10-20	28.3	30.0
20-30	21.2	22.5
30-60	14.1	15.0
60-100	11.3	12.0
100-150	10.3	11.0
150-200	9.4	10.0
Over 200	7.5	8.0

Moody, president of the National Coal Policy Conference learned from the Interior Dept. the proposed level of resid imports. The lobby group then started meetings with Interior officials to work for a cut.

Originally, the White House proclamation changing the basic regulations of the mandatory control plan was scheduled to be issued on Dec. 7.

The protests held up the release of the individual figures until last Monday.

This week the coal lobby group registered "a very strong protest" over the increase in residual fuel oil import allocations.

Moody said, "We are shocked by this action and plan immediately to ask the [Interior] department for a review of this matter and a downward adjustment of quotas in line with the facts."

The Independent Petroleum Assn. of America this week also noted that "the increased [resid] imports could prevent a needed recovery in the depressed prices for this product and thereby continue to depress the refiners' total realization from each barrel of crude."

Imports allocated to the West Coast in the first half of 1960 will average 226,848 b/d, down 17,071 b/d from present allocations.

But the area will have additional exempt imports of Canadian crude, estimated at 60,000 b/d based on the import plans of Puget Sound refiners.

The cut in allocations is based on the Bureau of Mines estimate that the difference between domestic supply and demand on the West Coast will be 279,000 b/d in the first half of next year, compared with a 265,500 b/d difference now.

From the 279,000 b/d figure, Interior officials deducted 52,000 b/d as their estimate of planned exempt imports from Canada. And of the remainder, crude and unfinished oil imports were established at 220,095 b/d and light products at 6,753 b/d.

The reduction of 13,215 b/d in the allocation for crude and unfinished oils required a slight reduction in refinery input percentages on the West Coast.

In addition to the change in import rules to consider estimated Canadian shipments to the West Coast as "domestic" supply, the 10% limitation on unfinished oils has been eased in District V.

The new rule limits the over-all unfinished oil imports to 10% of the total crude and unfinished allocation, but allows leeway for individual refiners to request an allocation higher than 10%.

Here Are the Company-by-Company

CRUDE AND UNFINISHED OIL ALLOCATIONS

(Barrels Daily)

DISTRICTS I-IV

	Jan.-Jun., 1960	Old
Advance Refining	321	255
Allby Asphalt	292	230
Allied Materials	301	245
American Petrofina	4,497	3,920
Anderson-Prichard	3,502	3,090
Ashland Oil & Refining (2)	13,275	10,870
Atlantic Refining	38,000	38,000
Atlas Processing	363	.....
Bayou State Oil	93	80
Bell Oil & Gas	2,174	1,980
Berry Asphalt	358	325
Berry Refining	735	645
Big West Oil	290	240
Bryson Pipeline	80	.....
Cactus Petroleum	309	240
Calumet Refining	233	210
Century Refining	316	240
Champlin Oil & Refining	3,189	2,690
Cities Service	21,040	21,040
Clark Oil & Refining	3,649	3,180
Colorado Oil & Gas (3)	2,094	1,720
Continental Oil	15,436	13,350
Cooperative Refinery	4,109	3,610
Cosden Petrolem	4,530	3,880
Cracker Asphalt	141	140
Cross (Henry H.)	403	345
Crown Central	4,027	3,600
Danaho Refining	380	380
Delhi-Taylor (4)	4,686	3,715
Dow Chemical	2,040	.....
Eddy Refining	264	225
Elk Refining	552	470
El Paso Natural	2,157	1,560
Empire Petroleum	590	460
Empire State Oil	409	360
Evangeline Refining	175	160
Famariss Oil	184	160
Farmers Union	2,229	1,870
Frontier Refining	2,455	2,070
Gabriel Oil	1,895	1,895
Gladieux Oil	74	55
Great Western	227	175
Gulf Oil	71,990	71,990
Hess	7,420	7,420
Howell Refining	507	425
Hunt Oil	762	.....
Husky Oil	778	630
Ida Gasoline	26	20
Illinois Farm Supply	595	490
Indiana Farm Bureau	1,565	1,340
Ingram Oil	2,650	2,650
Jarvis Co.	173	150
Jet Fuel Refinery	58	40
Kendall Refining	540	465
Kerr-McGee	4,794	4,050
Laketon Asphalt	339	240
Leonard Refiners	3,058	2,660
Macmillan Petroleum	470	380
Marvel Refining	121	150
Metropolitan Petroleum	915	1,310
Mid-America Refining	291	240
Midland Cooperatives	1,598	1,330
Monarch Refining	279	250
Monsanto Chemical	3,491	3,000
Murphy Corp.	3,260	3,260
Naph-Sol Refining	777	605
National Cooperative	3,266	2,760
Northwestern Refining	8,710	8,710
Ohio Oil (5)	10,229	9,310
Oriental Refining	469	400
Osceola Refining	225	220
Pennsylvania Refining	152	130
Petroleum Refining	234	230
Petroleum Specialties	926	720
Phillips Petroleum	18,682	15,960
Plymouth Oil	3,915	3,240
Pontiac Refining	6,364	5,250
Pure Oil	14,762	12,900
Quaker State	1,110	960
R. J. Oil	429	380
Rado Refining	46	35
Rock Island Refining	1,748	1,550
Seminole Asphalt	225	190
Shamrock Oil & Gas	2,590	2,160
Shell Companies (6)	25,132	21,570
Signal Oil & Gas (7)	11,810	11,810
Sinclair Oil	40,120	40,120
Sioux Oil	576	455
Skelly Oil	5,380	4,800
Socony Mobil	43,300	43,300
Sonneborn Sons	154	135
South Penn Oil	1,247	1,090
Southland Co.	2,270	2,270
Southwestern Oil	3,842	3,600
Stand. (Calif.)	43,070	43,070
Standard (Ind.)	35,120	32,410
Standard (N.J.)	46,499	46,480
Standard (Ohio)	12,707	10,790
Sun Oil	32,550	32,550
Sunray Mid-Continent (8)	13,826	13,320
Sure-Seal Corp.	52	45
Tennessee Gas (9)	3,932	5,010
Texaco Inc.	35,120	35,120
Texas Asphalt	1,515	1,515
Texas City	3,642	3,030
Texas Eastern	1,975	.....
Texas Gas	806	630
Texstar Corp. (12)	216	170
Three Rivers	125	105
Tidewater Oil	22,100	22,100
Unita Oil	156	135
Union Oil	426	375
United Refining	2,270	2,270
Vickers Petroleum	1,716	1,520
Vulcan Asphalt	210	25
Warrior Asphalt	138	135
Waskom Natural	122	70
Western Natural (1)	1,692	1,480
Western States	560	520
Westland Oil	215	165
Wickett Refining	328	290
Wolf's Head	247	200
Wyandotte Chemicals	308	245

DISTRICT V

Caminol	2,114	2,200
Century Oil	1,326	1,290
Douglas Oil	5,678	6,050
Edgington Oil	2,604	2,760
Envoy Petoleum	906	1,000
Fletcher Oil	3,926	4,200
Golden Bear Oil	1,252	1,220
Golden Eagle	2,249	2,400
Macmillan Petroleum	1,940	2,350
Manespo Refining	1,057	1,100
Mohawk Petroleum	3,064	3,290
Newhall Refining	691	690
Palomar Oil	378	400
Powerine Oil	3,852	3,930
Richfield Oil	21,282	21,350
Shell Companies	22,952	24,300
Signal Oil & Gas (10)	4,757	5,740
Socal Oil	811	940
Socony Mobil	18,045	19,930
Standard (Calif.)	35,291	37,260
Sunland Refining	1,737	1,800
Texaco Inc.	14,572	15,400
Tidewater Oil	26,803	28,400
U.S. Oil	5,663	6,000
Union Oil	24,310	25,320
Wilshire Oil	12,835	13,600

PUERTO RICO

Caribbean Refining	18,203	18,203

Import Quotas

	Jan.-Jun., 1960	Old
Commonwealth Oil	61,944	61,944
Gonzales Chemical	736	736

RESIDUAL FUEL OIL

DISTRICTS I-IV

Ashland Oil & Refining	193	165
Atlantic Refining	337	288
Ballard Oil	3,637	3,110
Belcher Oil	1,959	1,675
Buckley Bros.	5,269	4,506
Canadian National Rys.	25	21
Central Petroleum	3,813	3,261
Colonial Oil Industries	4,642	3,970
Copeland Terminals	16	.....
Gulf Oil	2,504	2,141
George Hall Corp.	441	377
Hess, Inc.	48,265	41,275
Inland Terminal	17	15
Kaneb, George T.	33	28
Metropolitan Petroleum	26,359	22,541
U.S. MPSA	1,704	1,458
New England Petroleum	10,567	9,037
Pure Oil	499	427
Royal Petroleum	3,112	4,226
Shell Companies (6)	21,618	18,486
Signal Oil & Gas (7)	8,818	7,541
Sinclair Oil	354	303
Socony Mobil	315	269
C. H. Sprague & Son	26,660	22,798
Standard (Calif.)	788	674
Standard (Ind.)	26,883	22,990
Standard (Ky.)	13,720	11,733
Standard (N.J.)	129,208	110,494
Steuart Petroleum	4,836	4,135
Texaco Inc. (11)	68,532	58,606
Whale Oil	373	319
White Fuel	9,503	8,126

PUERTO RICO

U.S. MPSA	516	516
Porto Rico Iron Works	1,074	1,074
Standard (N.J.)	550	550

LIGHT PRODUCTS

DISTRICTS I-IV

Ballard Oil	1,165	1,165
Blanchet & Fils Ltee.	3	3
Castrol Oils	2	.....
Gulf Oil	2,723	2,723
Hess, Inc.	3,234	3,234
Leonhardt Associates	0.20	0.20
Metropolitan Petroleum	5,100	5,100
U.S. MPSA	30,554	30,554
Pure Oil	5.50	5.50
Robinson Lumber	1.25	1.25
Royal Petroleum	1,476	1,476
Socony Mobil	25	25
Standard (Calif.)	7,284	7,284
Standard (N.J.)	13,590	13,590
Shell Companies (6)	9,812	9,812
Sun Oil	604	604
Texaco Inc. (11)	1,052	1,052

DISTRICT V

Alaska Propane	35	35
Calor Gas	2.10	2.10
Fairbanks Plumbing & Htg.	3.33	3.33
U.S. MPSA	3,876	3,876
Shell Companies	193	193
Standard (Calif.)	576	576
Time Oil	2,068	2,068

PUERTO RICO

U.S. MPSA	152	152
Shell Companies	57	57
Standard (N.J.)	104	104
Tropical Gas	41	41

LPG Sales Still Climbing

Sales of liquefied petroleum gas are continuing a steady upward climb, soaring 16.5% this year over 1958, to 8.7-billion gal.

Phillips Petroleum Co. in its annual study reports that sales have risen from 1-billion gal. for the entire year of 1944 to a record 1-billion gal. in the current month alone.

The biggest market for LPG continues to be domestic and commercial sales, up 9.4% this year to 3.6-billion gal.

But domestic and commercial uses are accounting for a decreasing percentage of the total market. This percentage, according to the report, has dropped from 51.2% of the market in 1954 to 41.5% in 1959. The biggest growth is still in home heating.

As a motor fuel, LPG gained at a faster clip than gasoline. During 1959, it climbed 10% over 1958 to 937-million gal. Gasoline demand so far this year is up 3.9%.

The largest-volume market continues to be for use in farm tractors. But diesel tractors are making serious inroads, especially on larger farms, the report notes.

As a counter-move, however, use of LPG in industrial lift and tow trucks continues to climb at a faster rate than any other motor fuel use for LPG.

Industrial and miscellaneous uses of LPG, including its use as "refinery fuel," climbed 26.5% this year, to a new high of over 1-billion gal.

Refinery fuel contributed heavily to the increase, largely due, the report notes, "to more exacting analysis and control of these fuel streams by many refiners." Use of LPG in secondary recovery of crude jumped about 20% over 1958.

Gas utilities used 2.6% more LPG in 1959 than in 1958, for a total of 245-million gal.

Phillips says: "It is significant that while extensions of natural gas pipelines into Florida (previously the largest LPG utility state) caused a sharp reduction there, gains in other areas [to meet peak requirements of gas utilities] were sufficient to show a small over-all increase in this category."

The speed at which the petrochemical market is expanding is evidenced by sales of LPG to chemical manufacturers—up 26.2% to almost 2.4-billion gal.

And chemical use of LPG is taking an ever-increasing percentage of the total industry market. This percentage has climbed from 20.5% in 1954 to 27.6% in 1959.

Demand for polyethylene, in marked contrast to the past several years, climbed more rapidly in 1959 than productive capacity.

Phillips says that polyethylene sales this year are expected to exceed 1-billion lb. And plants now being built "will probably keep production capacity well in advance of demand for some time."

The bright petrochemical horizon has one dark cloud, however—the export market.

Phillips warns that other countries are building petrochemical facilities at such a fast clip that many "of our foreign markets may soon vanish or be sharply reduced."

If the amount of LPG used for synthetic rubber were added to the amount used for chemicals, the total would account for over 33% of the total market.

The synthetic rubber group consumed 32% more LP-gas this year than last, for a total of 491-million gal.

The reason: increased automobile production.

There has been a substantial expansion in facilities to handle LPG to meet the growing demand.

Production of LPG was up nearly 18% over 1958. Eleven new plants came on stream in 1959, and several others were expanded. Phillips estimates that 16 new plants will come on stream in 1960. Underground storage capacity was also increased.

The rapid pace of expansion of LPG transportation facilities edged off this year.

Highlighting the developments was the expansion and improvement of facilities on the Little Big Inch pipeline, which was converted to products (including LPG) last year. Two short LPG lines were also put into operation in the Southwest.

The industry, the report says, is continuing its emphasis on larger-capacity highway units, and is becoming more conscious of the importance of more efficient loading and unloading of these units.

FOOTNOTES TO TABLE

(1) Includes Premier Oil & Refining; (2) includes Louisville Refining; (3) includes Derby Refining; (4) includes Mayfair Minerals; (5) includes Aurora Gasoline; (6) includes Asiatic, Shell Caribbean, and Shell Oil; (7) includes Eastern States; (8) includes Suntide; (9) includes La Gloria; (10) includes Bankline Oil; (11) includes Paragon Oil; (12) includes Texas Calgary.

French Producers Seek Caltex Plant

A group of French government producing companies is dickering with California-Texas Oil Co. to get a controlling share in its refining, distribution, and maritime transport facilities in France.

Although no agreement has been signed as yet, the French group is believed to be interested in getting a 60% share.

The French group is not yet complete, but it does include the government's two Sahara producers—SN Repal and Regie Autonome des Petroles—and the government's Bureau de Recherches de Petrole. One or more investment firms will probably join in.

The Caltex refinery has a capacity of 22,000 b/d, and is located near Bordeaux.

The French want the Caltex properties to give the government oil producing companies an outlet for their Sahara crude.

By 1963, the French estimate, their Sahara crude output could reach well over 500,000 b/d. And the French producing companies haven't much in the way of refining facilities or marketing outlets.

Petroleum processing and marketing in France is done by seven groups. Two French companies own 45% of the capacity and control about 40% of the market. One is Antav-Petroles de L'Atlantigue; the other, the government-controlled Cie. Francaise des Petroles. Each has two refineries.

About 55% of the market and the rest of the refining capacity is divided among the five American and British international firms. A few small independents share the remaining 5% of the market.

Other moves of this type may be in the offing, according to Paris oil circles.

For example, the government producers may again start up negotiations with Omnium Francais des Petroles, a distributor.

The government companies had carried on long negotiations with Omnium, but these were broken off last July when Omnium decided to join CFP. But the government then refused to allow the Omnium-CFP link.

Now informed observers are betting that Omnium and the government producing companies will make a deal.

Special Dec. 30 Issue

Since both holidays, Christmas and New Year's, coincide with Petroleum Week's Friday publication date, the two issues will be consolidated into a single special issue on Dec. 30.

There will be no issues dated either Dec. 25 or Jan. 1.

The combined Dec. 30 issue will carry a special report on the industry's outlook for 1960 and the immediate future years.

While there will be no Jan. 1 issue, subscribers nevertheless will receive their full complement of 52 weekly issues in 1960 because it is a year of 53 Fridays.

Mobil to Get 'New Look' Jan. 1

The stroke of midnight, two weeks hence, will have Cinderella-like aspects for Mobil Oil Co.

There'll be no ball to mark the transition, but effective at 12:01 A.M., Jan. 1, Mobil will blossom forth officially as a coast-to-coast entity, in fact as well as in name.

The change will culminate four years of intensive reorganization, a top-to-bottom overhaul that streamlines and consolidates its domestic affairs into a single, nationwide operation.

Disappearing from the scene will be General Petroleum Corp. and Mobil Producing Co., both of which will join Magnolia Petroleum Co. in the gone-but-not-forgotten pages of petroleum history.

Magnolia lost its corporate identity Oct. 1, in one of the many phases of the reorganization, which had its beginnings in 1955 when the name Socony-Vacuum was changed to Socony Mobil.

In due course, the big General Petroleum Building in downtown Los Angeles will be renamed too, as will all other facilities bearing the GP label.

The new Mobil Oil Co. will be leaner in one respect, but it will rank among the top four companies in the country in terms of assets, facilities, and marketing outlets.

For hundreds of employes, the reorganization means transfers to new jobs, often in new locations. For others, there were promotions. For some, necessarily but unfortunately, there were terminations.

The trimmed down work force will exceed 36,000 people, including about 860 in Canada.

The domestic total, however, does not include additional thousands employed by Socony Mobil Oil Co., the corporate parent, whose headquarters, like those of Mobil, are in its towering new building in New York.

Mobil's other vital statistics emphasize the immensity of the new domestic setup.

Here are the highlights:

- It will sell products in 45 states, being exceeded only by Texaco Inc. in the total of states involving single-brand marketing.
- It will have 32,000 outlets, third-highest among domestic oil companies.
- It will sell more than $1.5-billion worth of products annually.
- It will have production in 18 states, being topped only by Standard Oil Co. (N. J.) with 20, and tied with Texaco and Sun Oil Co., also with 18.
- It will have crude production of 265,000 b/d and proved crude reserves of more than 1-billion bbl.
- It will rank fourth in refining capacity, with 700,000 b/d.
- And its assets of $1-billion will make it fourth in size in the domestic petroleum picture.

Pipeline facilities and personnel, now consolidated under Magnolia Pipe Line Co., will serve Mobil but will continue as a separate entity. Included are 15,500 miles of crude and products pipelines, with a capacity of 1,380,000 b/d.

It is one of the few companies which operates already in Alaska and Hawaii. Its competitors in the ice-bound state are Texaco, Shell Oil Co., Union Oil Co. of California, and Standard Oil Co. of California. In sun-baked Hawaii, it vies with Union, SOCAL, Shell, and Tidewater Oil Co.

It may be only a question of time before Mobil penetrates the five states in which it presently has no marketing facilities.

These are Kentucky, Mississippi, Alabama, Louisiana, and Florida. Mobil's management has no present plans for invading these markets, but its stated policy is to "explore new areas constantly." In the rough and

tumble contest for outlets, Mobil sources concede that "anything can happen."

While the domestic reorganization was going on, the international operations were being overhauled, too.

The problems involved in Mobil International Oil Co. were different, since they concerned foreign governments, and varying customs and traditions.

Reporting procedures were revised so that all now clear through a single management, and, in Socony's words, its overseas operations "have been assembled into a coordinated enterprise."

Come New Year's Day, there'll be some changes in official titles, too.

Robert L. Minckler, president of General Petroleum, will become a senior vice-president of Mobil, along with John L. Latimer, president of previously absorbed Magnolia.

They'll work under Herbert Willetts, who became president of Mobil last March.

Willets and Herman J. Schmidt, president of Mobil International, are executive vice-presidents of the parent corporation, which is headed by Albert L. Nickerson as president and chief executive officer.

Each of the subsidiary companies has its own physical organization, but in certain cases the parent corporation will function for all.

Mobil and Mobil International, for example, will have their own general counsels, comptrollers, employee relations department, and exploration and producing department.

But corporate planning, economics, public relations, and purchasing will be in the parent firm, and will serve all three. In addition, research and marine transportation will be in the top firm.

Making the change-over represents a titanic task. It took a company task force several months to do the job on Magnolia. The change had to be reflected in thousands of leases, contracts, drilling permits, bank accounts, tax reports, and title registrations of aircraft, vehicles, and boats.

Whimsically, some people even said that the magnolia trees in the Beaumont refinery country had to be relabeled "Mobil Trees."

The General Petroleum and Mobil Producing Co. additions will require similar thousands of changes. In one facet alone, it is estimated that 500,000 letters and notices will have to be sent to credit card customers, royalty owners, suppliers, government agencies, and others, just to advise them of the consolidation.

What's New / IN THE INDUSTRY

Shell Oil and the Northern Pacific Ry. have completed what appears to be the Williston Basin's most important wildcat in some time. Their No. 32-15, section 15-145n-101w, McKenzie County, N. D., was completed for 1,526 b/d through 32/64-in. choke and perforations in the Mission Canyon (Mississippian) at 9,399 ft. Located in the central untested area, it's 36 mi. southwest of Amerada Petroleum Corp.'s No. 1 Signalness Unit, Dunn County.

•

January and February allowables in Louisiana will reflect an increase in the basic percentage formula. Allowables, which have been based on 34% of the March, 1953, depth formula since September, 1958, will be boosted to 35% next month. The state conservation office estimated it'll mean 22,500 b/d more initially than the current allowable of 936,575 b/d. The new allowable order will be issued next Wednesday. A spokesman for the Texas Independent Producers & Royalty Owners Assn. criticized the increase, charging that Louisiana had set an allowable pattern "in excess of its fair share of the market demand."

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Two court orders could lead to a new review of the limits of the Railroad Commission's Rule 37 permitting small-tract drilling. Temporary injunctions issued by Judge W. R. Blalock of the Edinburg (Tex.) state district court enjoins two companies from continuing fracturing on town-lot leases adjacent to leases owned by the plaintiff, Delhi-Taylor Oil Corp. The injunctions were issued against Coastal Gulf Oil Co. and others covering two Rule 37 leases drilled within the corporate limits of Pharr, Hidalgo County, South Texas.

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Jan. 12 has been set as the date for CATC producers to support their initial price of 22.4¢ per Mcf. for offshore natural gas. The Federal Power Commission reopened the case this week, in compliance with last June's Supreme Court decision which requested such evidence. The Supreme Court upset the FPC order that granted certificates without initial price limitations to the CATC producers—Continental, Atlantic, Tidewater, and Cities Service. This week the Supreme Court also ordered FPC to review the initial rates it had granted to Transcontinental Gas Pipe Line Co., in a ruling similar to the CATC case.

•

Alaska's first sale of offshore leases brought better than $4-million from six oil companies and three individuals. The leases are located in Kachemak Bay, off the west coast of Cook Inlet, and in Wide Bay, off the east coast of the Alaskan peninsula. Successful bidders included: Union Oil-Ohio Oil, $2,542,615 for five tracts containing 10,936 acres; Phillips Petroleum, $1,033,715 for 20 tracts; Standard of California and Richfield Oil Corp., $372,731 for 8,269 acres; and Texaco, $57,609 for a single tract of 3,359 acres.

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Stockholders of Leonard Refineries, Inc., last week O.K.'d plans to merge with Standard Oil Co. (Ohio). The merger, which is to take place Jan. 28, will strengthen Sohio's marketing position in Michigan. The vote: 872,144 in favor, 96,571 against.

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The legality of Humble Oil & Refining Co.'s merger into Standard Oil Co. (N.J.) is headed for a court test. Counsel for minority stockholder Jack Finkelstein, of Houston, filed suit in Austin, contending that the Texas Corporation Act, under which the merger was consummated, is unconstitutional.

French Goal Would Compound World Surplus

With any luck, the oil industry might have been able to lick its large, worldwide surplus capacity problem within a reasonable period of time.

But that was before the big new discoveries in North Africa, topped by the recent spectacular strikes in Libya, spurred the current rapid pace of new development there.

And, now, the problem threatens to be further compounded by an additional factor that could multiply the industry's economic and political headaches many times over.

* * * *

This factor is the current French Government drive to ensure priority treatment for its Sahara crude. Already, as discussed in this column July 31, the French have taken steps to assure top priorities for Sahara crude at refineries within France itself.

But now the Paris Government is going considerably further: It is seeking preferential treatment for Sahara crude throughout the entire six-nation European-Common Market (West Germany, Italy, Netherlands, Belgium, and Luxembourg, plus France).

* * * *

At stake is a big market: The Community consumed some 70-million tons of oil last year, of which about 60-million tons—or roughly 1,200,000 b/d—was imported, mostly from the Middle East.

And it's a rapidly growing market: By 1965—or in just six years—the area's consumption is expected to nearly double, to 125-million tons annually (2,500,000 b/d).

The program the French have been advancing in European capitols is an ambitious one: "Community" crude (mostly Sahara) could cover more than 50% of the Common Market's requirements by 1965-67.

More specifically, the French have proposed a preferential market of 60-million to 65-million tons for "Community" oil by 1965 out of the area's total expected demand of 125-million tons. Since local European oil production is not expected to exceed 10-million to 15-million tons, this would mean a priority of some 50-million to 55-million tons annually for Sahara crude within six years.

This amount, equivalent to 1,000,000 to 1,100,000 b/d, is nearly equal to the entire present production of Saudi Arabia, the Middle East's second biggest producer.

* * * *

The implications of such preferential treatment for Sahara oil in an already saturated world market would be far-reaching. For instance:

- It would mean that Sahara producing capacity would be developed faster, and take over a far larger share of the European Market, than it could on a normal competitive basis. Consequently, additional excess capacity would be piled up in other areas that otherwise would have shared in this growth.
- It would mean a serious setback to the neighboring Libyan oil—which does not have comparable political backing for enforced entry into European markets.

Obviously, it would be difficult enough to fit both Libyan and Saharan production into the European market on a normal competitive basis without dealing a blow to Middle East production.

But to fit Libyan production on top of a large enforced Sahara priority in the European Common Market may well nigh be impossible without a crisis in the Middle East.

Nor can one ignore the political repercussions in Libya if production of its new discoveries is stifled. A desperately poor area, Libya now sees its first real hope of economic development and prosperity through its oil production, and the government is naturally pressing the oil companies to get production flowing as rapidly as possible.

Actually, Libyan oil is generally regarded as having a competitive edge over Sahara crude for European markets.

Its higher fuel oil yield makes it more suitable for the European demand pattern than the high-gasoline-yield Sahara crude. And Libyan production is expected to be lower-cost than Saharan: It lies closer to the Mediterranean (75 to 100 mi. as compared with about 400), and some of the recent Zelten and other discoveries are much more prolific than the Sahara finds.

Moreover, in a free market, the oil companies are more likely to move their own Libyan (and Middle East) production into their European refining and marketing outlets than they are to purchase French Sahara oil.

* * * *

Enforced diversion of any sizeable volume of Common Market consumption from Middle East production would also pose major economic and political problems in the Middle East—none calculated to make life easier for the oil companies.

The French have maintained, in their discussions in Europe, that they are not proposing to "chase off" Middle East oil from the Common Market. They argue that, with the rise in demand, their proposed Sahara targets can be met and still leave total net imports from all other sources at least through 1965 at about last year's level (60-million tons).

This argument is little comfort for the Middle East.

EUROPEAN COMMON MARKET'S chief oil source is now the Middle East, which supplied most of its 1958 imports of about 60-million tons (except for some specialty oil from the Caribbean).

IF FRENCH WIN their Sahara priority targets in the Common Market, this is how the picture would look in 1965, with Sahara crude providing nearly half of the six nations' oil supply.

The Middle East producing countries, too, have been counting on a steady growth in oil production to meet their budgetary and economic development needs. Now they are becoming slowly reconciled to the realization that North African oil will cut into their market growth in Europe somewhat.

But to expect them to accept the idea of being cut off from any future growth in their prime European market by French Government action is something else again.

Take, for instance, the situation in politically unstable Iraq. Expansion of the country's oil production has been delayed by the sabotage of its pipeline outlets in 1956, and by need for major new pipeline and port construction. Now the government is counting heavily on a sizeable increase in its oil ouput when Iraq Petroleum Co.'s current expansion program is completed in 1962.

Iran, too, is actively pressing the international oil consortium to increase its exports substantially (the decision to expand export facilities at Kharg Island was based on prospects of substantial growth).

Similar pressures are being exerted, in varying degrees, by other Middle East producing countries.

* * * *

Whether France will actually succeed in persuading its Common Market partners to agree to preferential treatment for Sahara crude remains to be seen.

But it would be foolish to underestimate the French determination to do so, in one way or another.

The simplest method, of course, would be by a Common Market tariff on imports of non-Community crude. This, however, is ruled out by the Common Market treaty itself, which specifically exempts crude from import restriction (in order not to increase energy costs).

Now the French Government is trying to get around this prohibition by achieving the same result via refined products. The treaty permits import duties on products, provided they are negotiated among the Common Market members.

At a recent meeting of the Community's technical committee on refined products and chemicals, the French submitted a proposal to set tariffs on refined products manufactured in the Common Market countries from crude imported from non-Community sources —with no duties on products refined from Sahara and other Community crudes.

In other words, the French proposal would set duties on products manufactured in the Community as if the products themselves had been imported, and based on the source of origin of the crude oil.

To make this scheme more palatable, the French subsequently proposed an additional exemption for a certain proportion of products made from crudes from other sources. This proposal, while reducing somewhat the duty-exemption advantage for Sahara oil, would still give the French what they want: a priority for Sahara crude with quota limitations on imports of other crudes.

While the other Common Market governments have been cool to these proposals thus far, the French have by no means given up. They are now negotiating at top ministerial levels.

Reports from European capitols indicate, too, that the French are trying to sweeten their proposals by offering various other quid-pro-quo concessions to their Common Market partners—such as purchases of agricultural surpluses from the other countries, and so forth.

What the final result will be is anybody's guess at this stage.

But it is evident that the French are determined to keep trying until they find some basis on which to get a sheltered market for Sahara oil.

Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
December 18, 1959

Government oil policy-makers now are hoping for a few months of calm on the imports front. Officials responsible for controlling imports think the latest rulings will succeed in dousing most of the brush fires which were fanned in 1959 (page 15). Imports of residual fuel oil for early 1960 will be increased—not so much as some oil companies wanted, but not reduced as the coal industry insisted. And more companies now can be admitted to the program as product importers. The Administration's careful, middle-of-the-road policy promises to keep Congress relatively quiet next year and also to avoid any strong protests from any of the industry segments, unless some unexpectedly severe shortages or overages develop.

•

Watch for renewed activity by the Oil Import Appeals Board early next year. The board has been dormant in recent months, after quickly polishing off appeals on the present, 1959 allocations. Now two events spell an increased workload for the three-man board starting next month: First, new allocations for the first six months of 1960 have been issued to importing companies. Some firms are expected to appeal their cases. Second, the board now has a new set of rules, giving it increased powers. The major addition to the board's authority is in the area of finished products, where companies without an importing history can now be considered for allocations.

"Newcomer" companies must make their appeals to the board by Jan. 15. Companies that didn't receive crude or unfinished oil allocations have 15 calendar days after the beginning of the new period to appeal their cases. The deadline for an appeal by companies without finished product allocations falls at the same time.

•

Sen. Wayne Morse (D., Ore.) is becoming interested in Latin American effects of the U.S. imports program. Morse, chairman of a Senate Foreign Relations subcommittee on Latin American commodity problems, ordered a special study on the issue to be made by a Washington economic consulting firm. The study recommends that the U.S. decision for mandatory import controls be reviewed, and that a "more positive showing" be made by domestic industries before establishment of quotas.

•

Most members of the Federal Power Commission are cool to the idea of a U.S.-Canadian treaty on natural gas trade. A majority of the commission membership sees no overriding need to negotiate a treaty. Chairman Jerome E. Kuykendall is not opposed to the idea, but thinks lengthy negotiations might slow imports of Canadian gas. Commissioner Arthur Kline believes, at present, that Congress must take the lead in seeking any treaty. And Commissioner Frederick Stueck agrees with the State Dept. view—that no treaty is necessary.

Only Commissioner William F. Connole insists that some action should be taken. He wants machinery assuring "reasonable" border prices, a reasonable supply for U.S. consumers, and a reasonable market for Canadian companies. Connole suggests lengthy negotiations might be sidestepped by first exchanging informal papers recognizing private contracts approved by FPC and Canadian officials.

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Materials Salvage Is Big Business

- **Salvagers in the Denver-Julesburg Basin are turning some neat profits by reconditioning pipe and equipment from wells taken off production.**
- **For the operators, sale of "iron" in such wells returns a good percentage of their original investment and spurs further drilling.**

Salvage of equipment and pipe from depleted wells and other wells taken off production is a growing business in the Denver-Julesburg Basin.

Upwards of a half-dozen companies —some of them national—are buying and salvaging equipment from former producers in western Nebraska and eastern Colorado.

National Supply Co., for instance, salvaged pipe and equipment a few months ago from 17 wells on a major-company lease that was to be flooded. The salvage included pumping units, casing, tubing, sucker rods, tank batteries, electric motors, and miscellaneous equipment.

The material was cleaned, reconditioned, and stacked for sale at the company's Ft. Morgan (Colo.) yard.

National currently has a deal working for another salvage job involving 20 wells on a lease that also is to be unitized and flooded.

The reconditioned equipment is sold "to people who can't afford new equipment—small operators, for instance, who are trying to save every possible dollar," says a company spokesman.

He adds, "We are definitely in the used-equipment business and are actively seeking such deals here and elsewhere."

Basin Pipe & Supply Co. has averaged three to four salvage jobs per month in the basin. And there are several other firms that have worked at about this rate.

While the pipe and equipment so recovered has been instrumental in maintaining a high rate of activity in the basin, the effect of such salvage on the economics of Denver-Julesburg drilling is considered more important by some observers.

When a new operator moves into the basin, his first well is usually completed with new material, despite the warranties given on the reconditioned equipment.

A little experience in the completion methods and subsurface conditions in the basin, however, generally convinces him that used equipment will meet his needs. At this point he becomes a customer for the salvage firm.

The salvage operation thus benefits operators in two ways: (1) It is a good source of income from depleted wells, and (2) it reduces pipe and equipment costs for drilling and completing new wells.

For the salvagers, gross profit per abandoned well may run from $4,000 to $5,000. For the operator, the salvage means recovery of about $15,000 of his original investment, according to one of the oldest salvage operators in the basin.

Salvage firms will pay about $15,000 for all the equipment on a "No. 1" well on a lease, assuming the well is about 6,000 ft. deep.

Cost of salvage will be about $2,500; and another $1,500 will be spent to restore the lease, move out the equipment, and recondition it.

Pipe is reclaimed from about the top of the Niobrara, leaving a few hundred feet of casing in each hole.

A "No. 1" well in the basin to the 6,000-ft. level can be completed for $50,000 to $60,000. Thus, the $15,000 which the operator gets for this well after three to seven years represents a good portion of the original investment.

Taken another way, the cost of drilling a dry hole in the basin runs from $18,000 to $25,000. Salvaging pipe and equipment from a producer that is no longer economic provides a large part of the capital for another exploratory test.

Colorado abandonments at the present time are generally of wells completed in 1954-56.

A few earlier wells are being salvaged, too, and occasionally a producer completed in 1957 or even later appears on the official state list. The list currently shows a total of 250 wells properly abandoned.

This does not include wells converted to injection, nor does it include any wells abandoned without proper notice. Regulations have not always been so rigidly enforced as they are now. The state commission suspects that a good many Denver-Julesburg wells have been abandoned without proper records having been filed.

Similar figures are not currently available for western Nebraska, but salvage activity there has been less noticeable than in Colorado. The big surge of drilling in western Nebraska did not come as soon as it did in Colorado. Hence, most Nebraska producers are younger.

The big drilling years in the basin were 1954, 1955, and 1956. Many of the producers drilled in those years aren't ready yet for salvage, but many are approaching a point where good economics will dictate as much recovery of investment as possible.

The relatively short production life of wells in the basin is offset by the fact that most producers pay out in two or three years, with production generally averaging from about 75 b/d to 100 b/d per well. Payout, less royalties, runs about 65% to 70% net, with income of more than $1.80 per bbl. being realized.

Since the pipe and equipment have been in use only from four to five years, and the formation fluids are mostly noncorrosive, salvage firms generally find the metal in good condition.

Several salvage companies told Petroleum Week that some of the pipe still carries the original mill stencil.

A good knowledge of the basin and its history is essential for a successful salvage operation.

A. T. Skaer, a 25-year veteran of the equipment business, emphasizes the need to know the basin. Skaer was an organizer of Basin Pipe & Supply, but recently left that firm to organize Art Skaer, Inc., continuing in the same business.

He says, "I want to know everything I can about the individual well before I state the price I'll pay. Some areas of the basin are much riskier than others. The only protection the buyer has is his knowledge of the conditions he'll meet."

He adds, frankly, that some areas are better left alone.

Salvage and sale of used equipment in the basin assumed significant

proportions during the 1956 steel strike.

Shortages at that time forced operators to search out all possible sources for steel.

Business actually slowed down, however, during the recent steel strike, so far as salvage firms are concerned.

Says one spokesman: "Operators, especially the major companies, are salvaging their own wells. They know the value of the pipe, and they are carrying their depleted wells as a sort of reserve inventory."

The total salvage potential doesn't add up to the total number of producers drilled, but the percentage is big enough to insure a growing operation.

Roughly 10,000 wells have been drilled in the D-J Basin since the modern era of development was kicked off by the western Nebraska discovery in 1949. About half have been producers.

According to a survey made in 1956, approximately half the economic drilling possible in the basin has been done.

That which remains offers a ready market for equipment from the older wells, since it has already been proved that used iron meets basin requirements.

Far North Wildcats Scheduled

Oil companies are going ahead with drilling operations in Canada's Far North despite the fact that the long-awaited new regulations for the region haven't been released yet. These regulations are expected to be released in the next few months, however.

The Canadian Petroleum Assn. earlier this month submitted its proposals to the government as one of the final steps toward industry-government agreement.

Drilling was scheduled to start a few days ago at Canada's most northerly venture, located above the Arctic Circle.

The wildcat, Richfield-Scurry-Rainbow No. 1 Grandview Hills, 18 mi. west of the Mackenzie River, downstream north from Ft. Good Hope, has a projected depth of 6,000 ft. (PW—Sep.4'59,p25).

Richfield Oil Corp. (L.A.) has assumed financial responsibility for the test as part of a farmout deal in which Richfield acquired Scurry-Rainbow's 67.5% in about 3.5-million acres in the Northwest Territories (PW—Dec.4'59,p36).

At least three other companies are now preparing to start wildcatting in the Northwest Territories.

Western Decalta Petroleum, Ltd., says it has moved equipment to a point 18 mi. north of Ft. Good Hope, and is now waiting for freeze-up to move it the rest of the way to the drill site.

Drilling crews are scheduled to move in early next month to start the first of the planned "two or three" shallow tests in the vicinity of the Rond Lake oil seep.

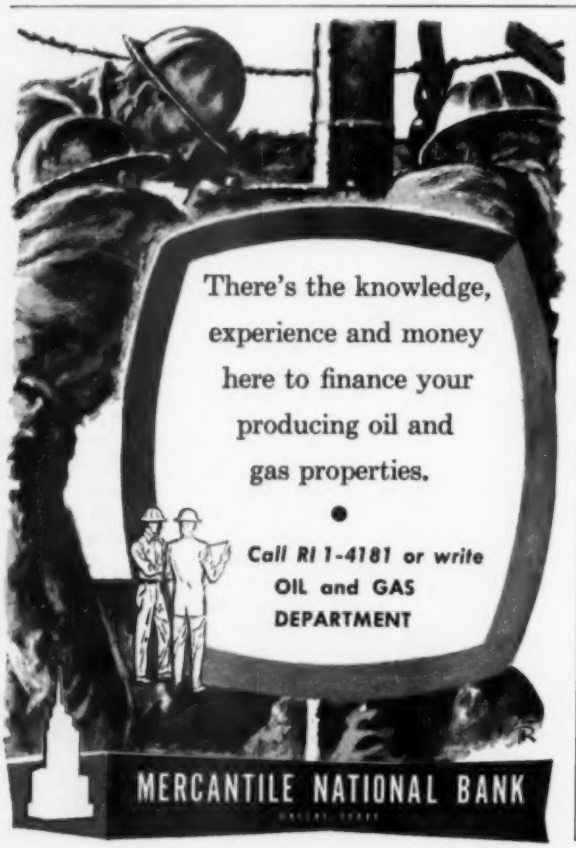
The target depths of the tests, says Decalta, will be in the neighborhood of 900 to 1,400 ft.

Home Oil Co. also is waiting for a hard freeze to start moving equipment into the Celibeta Lake area, formerly known as the North Petitot area.

Home, as operator for itself and others, will drill two tests on a 1,224,000-acre farmout.

Amerada Petroleum Corp. is moving equipment to an undisclosed site in the Yukon in preparation for drilling this summer.

Amerada is operator for a group of companies on more than 3,850,000 acres in the Northwest Territories and Yukon.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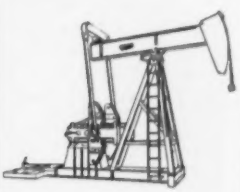

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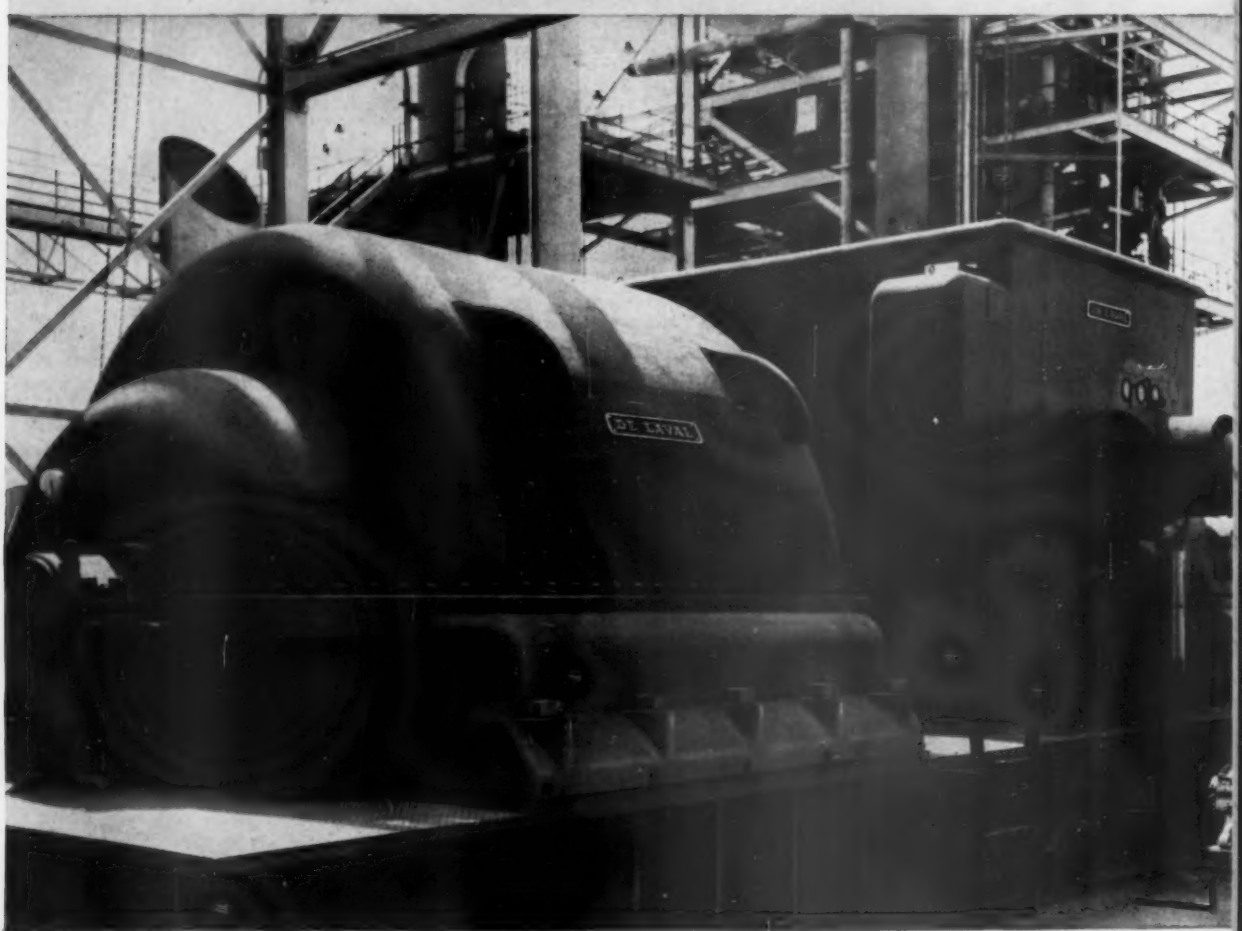
Driven by automatic extraction steam turbine

Shown below is the large 11,300 horsepower centrifugal blower which compresses air for the main blower service in catalyst regeneration at Standard Oil of Ohio's new refinery at Toledo, Ohio.

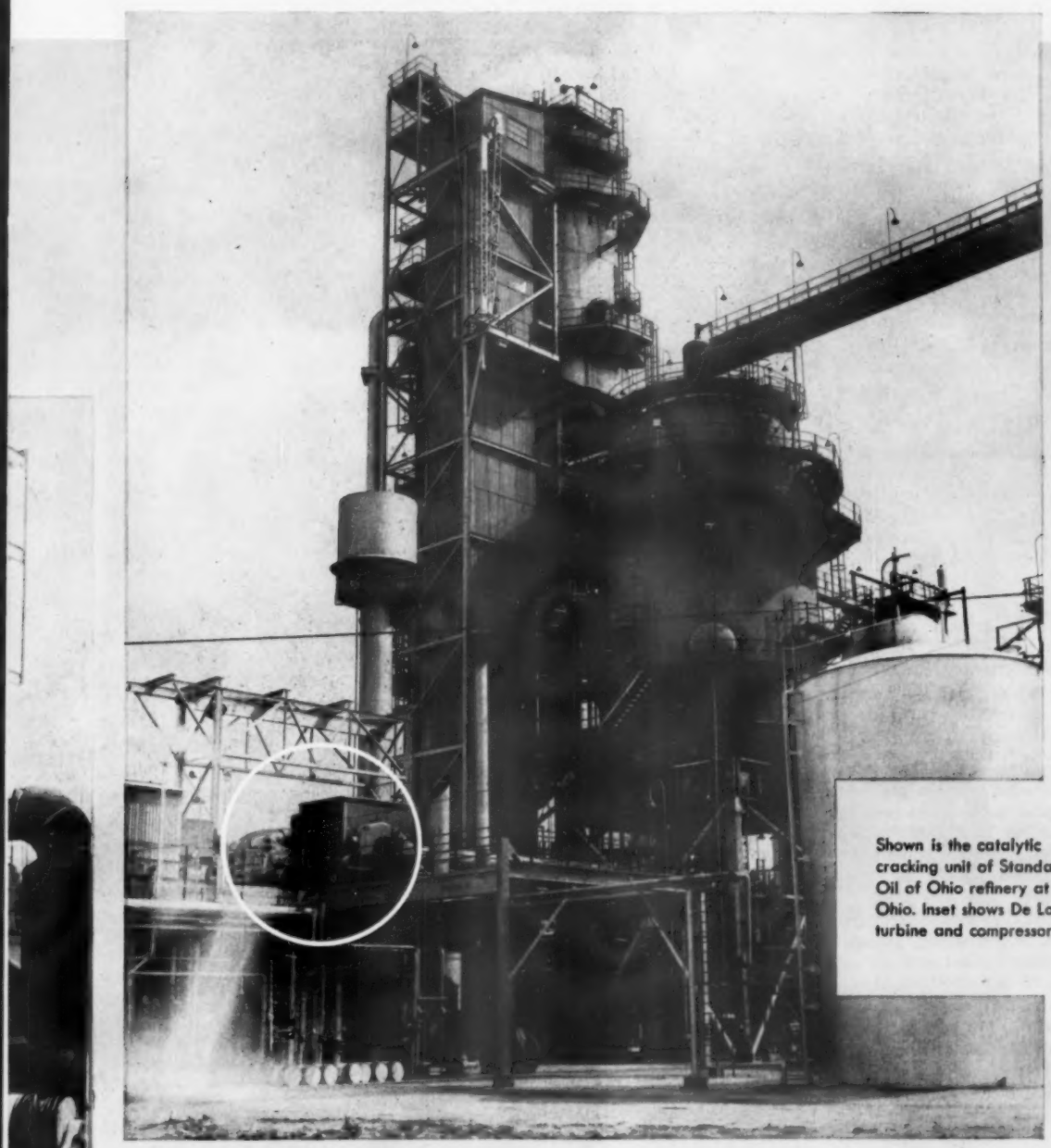
Driven by a De Laval single automatic extraction steam turbine, it compresses 110,300 cfm in four stages at 2800 rpm. Inlet pressure is 14.7 psia and discharge pressure is 40.7 psia. The turbine is designed for 600 psig ISP, 740F extracting at 55 psig, and exhausting to 28" Hg.

This is another example of De Laval proved performance.



DL-437

horsepower DE LAVAL compressor for "cat cracker" at SOHIO refinery



Shown is the catalytic cracking unit of Standard Oil of Ohio refinery at Toledo, Ohio. Inset shows De Laval turbine and compressor unit.

DE LAVAL *Steam Turbine Company*

897 NOTTINGHAM WAY, TRENTON 2, N. J.

What's Needed for a 50,000-ft. Hole?

The drilling, equipping, and producing of a 50,000-ft. hole has become a favorite topic of oil's engineering and research groups.

The ultra-deep hole is again generating interest in the industry following a panel discussion on the subject at the recent Tulsa meeting of a committee of the American Society of Mechanical Engineers (PW—Dec.11 '59,p17).

Three specialists—a drilling contractor, an oil-company engineer, and a steel-company official—looked at some of the chief problems involved, and the prospects of licking them.

Their conclusion, in brief: Modification of existing drilling equipment and tubular goods could make possible the drilling and equipping of such a well, but producing it would be as rough a mechanical challenge as the industry has ever faced.

One proposal—by Big Chief Drilling Co.'s Jack Abernathy—calls for a three-stage drilling and casing program.

Abernathy's part on the panel was to consider the mechanical aspects of drilling the ultra-deep hole.

The drilling contractor suggested, as one possibility, the drilling of a 12¼-in. hole to 25,000 ft.; an 8½-in. hole to 35,000 ft.; and a 5⅜-in. hole to total depth.

Basing his considerations primarily on maximum hook load capacities placed on hoisting equipment, Abernathy suggested setting 9⅝-in. casing to 25,000 ft.; running 7-in. liner from 25,000-35,000-ft.; and 4- or 4½-in. liner from 35,000 ft. to total depth (Plan 1, drawing).

Abernathy noted that the greatest hook load would occur while running the 9⅝-in. casing to 25,000 ft., but that currently available equipment, with modifications, would be adequate.

He calculated that the gross weight of the 9⅝-in. string would approximate 1¼-million lb., but that its net weight (weight actually placed on hoisting equipment) would approximate only 800,000 lb., because of the buoyancy provided by a column of 18-lb. mud. This net weight, he said, could be handled by existing drawworks.

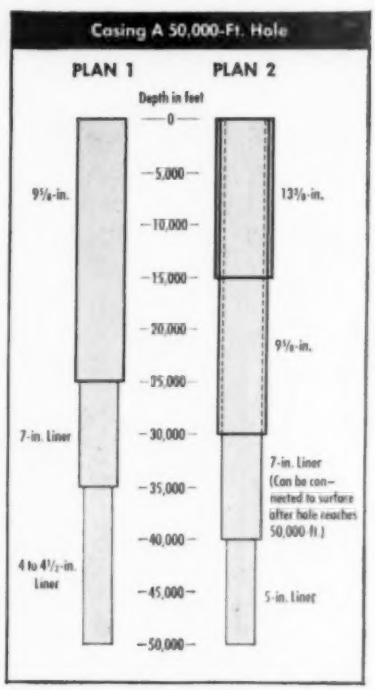
Maximum gross weight of the 7-in. liner would be approximately 400,000 lb., with about 500,000 lb. of 4½-in. drillpipe required to run it. Net weight of the entire assembly if buoyed by 18-lb. mud would be around 600,000 lb. A considerably reduced load would be encountered in running the 4-in. or 4½-in. liner.

Hook load for a tapered drillstring to 50,000 ft. is estimated at around 589,000 lb. when buoyed by 18-lb. mud. Abernathy figured a maximum net weight of about 50,000 lb. for drill collars at total depth, with another 100,000 lb. lost to wall friction while rotating. Figuring a minimum yield of about 900,000 lb. at the top joint of P-150 pipe (assuming it is available at the time the 50,000-ft. hole is drilled), would leave some 161,000 lb. available for free pull at the top joint.

Abernathy points to the braking system as one area in which modifications would be required before a 50,000-ft. hole could be drilled.

The hydraulic brakes now used, he said, probably would not be adequate for running casing in the 50,000-ft. hole. Magnetic-particle brakes, especially improved versions now in the development stage, might do the job, Abernathy said. Other types also are likely to be developed in the near future.

Currently available high-strength wire line should prove adequate when properly strung, he continued. Single 1¼-in. lines now are rated up to 70 tons, and single 1½-in. lines have ratings up to 114 tons.



PROPOSED CASING PLANS for a 50,000-ft. hole include one suggested by Big Chief Drilling Co.'s Jack Abernathy (left), and one by R. L. Guernsey, of Jones & Laughlin Steel Corp. (right).

Probably the most serious problem to be faced in the drilling of a 50,000-ft. hole, Abernathy believes, will be in providing mud pumps capable of withstanding the extremely high pressure requirements.

Several brands of triplex pumps now being used have sufficient horsepower ratings, but modifications and improvements will be necessary to meet pressure requirements.

Present pumps can handle pressures of 2,300 psi. over extended periods of time, and pressures up to 3,000 psi. for short periods. Exceedingly high operating costs are encountered at the higher pressures, however.

Abernathy noted that several plunger-type and multicylinder pumps now being developed hold promise of handling pressures of 3,000 psi. and more over longer periods. These may prove adequate for the ultra-deep hole.

Bottomhole temperatures on the order of 750-1,000F probably will require a refrigerated mud system, he added, and then some sort of improved oil-base or synthetic-base muds probably will have to be developed.

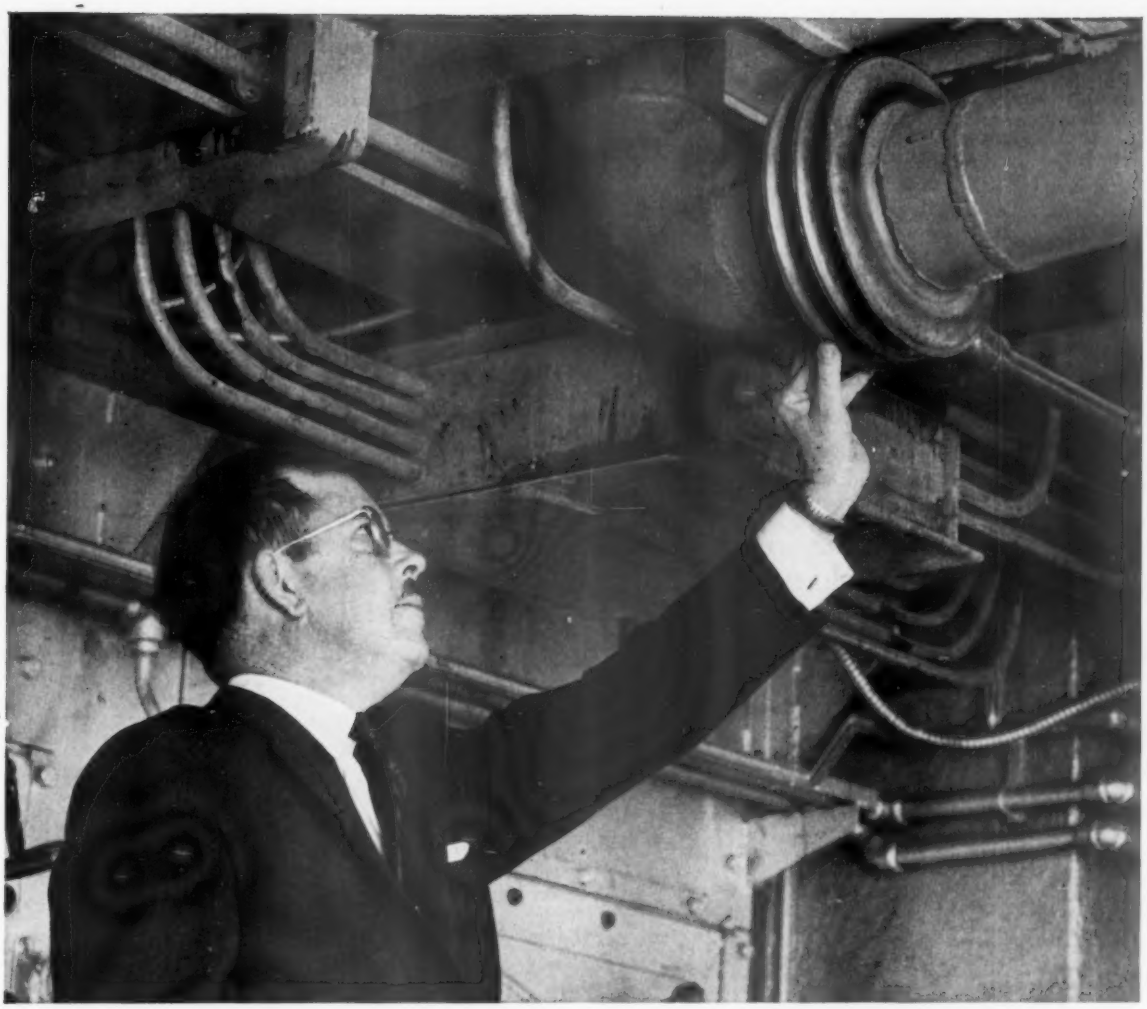
Elevated temperatures may also reduce bit life by softening cutting edges of present-day bits. Refrigerated mud systems may ease this condition to some extent, but better metallurgy may also be required.

Round-trip time at depths of 40,000-50,000 ft. will be on the order of 24-30 hours if thribbles are pulled, Abernathy said.

R. L. Guernsey, of Jones & Laughlin Steel Corp., approached the problem of equipping a 50,000-ft. hole by first establishing anticipated conditions at that depth.

This, Guernsey said, was done by extrapolating pressures and temperatures encountered during the past deep-drilling operations. Determinations were based on a straight-line pressure gradient of 0.8 psi. per ft. and a temperature gradient of one degree Fahrenheit for each 62.5 ft. of depth. This gave a bottomhole pressure approximation of 40,000 psi. at 50,000 ft., and a temperature of around 800F.

Having established these conditions, J&L researchers then determined to stay as close as possible to weights, connections, and grades of pipe with which they are familiar. Most of these



Solar Field Engineer Bill Emery inspects a Sola-Flex joint in the Los Angeles Department of Water and Power's Valley Steam Plant

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pipe grades are either in production or have been developed experimentally.

J&L's casing program for the 50,000-ft. hole calls for four stages.

- First stage: Set 13⅜-in. casing to 15,000 ft. All buttress-joint, with weights and grades as follows: 72-lb. P-105 from 0-1,500 ft.; 72-lb. N-80 from 1,500-11,500 ft.; 78-lb. N-80 from 11,500-13,400 ft.; and 78.47-lb. P.E. N-80 from 13,400-15,000 ft.
- Second stage: Set 9⅝-in. casing from 0-30,000 ft. All buttress-joint, with weights and grades as follows: 53.5-lb. EHS-150 from 0-7,000 ft.; 47-lb. P-110 from 7,000-12,500 ft.; 53.5-lb. P-110 from 12,500-17,800 ft.; 53.5-lb. EHS-150 from 17,800-23,900 ft.; and 58.4-lb. EHS-170 from 23,900-30,000 ft.
- Third stage: Set 7-in. OD liner from bottom of the 9⅝-in. casing at 30,000 ft. to a depth of 40,000 ft. Use extreme-line-joint 35-lb. EHS-150.
- Fourth stage: Set 5-in. liner from bottom of the 7-in. liner at 40,000 ft. to total depth of 50,000 ft. Use extreme-line-joint 20.1-lb. P.E. UHS-170.

J&L's researchers give three reasons for running the last two strings as liner: (1) reduced load; (2) joint strength limitations; and (3) need to keep upper hole section large enough to permit passage of large-OD tapered drillstring.

Guernsey suggested that after the open hole between 40,000 ft. and 50,000 ft. had been drilled, it would be possible to connect the 7-in. liner to surface. He noted that the 5-in. pipe could also be connected to the surface, but that it would then be difficult to get a practical drillstring to bottom because of the restricted ID of the upper casing section.

Design-factor calculations for the tubing were based on the same assumptions and conditions used for the casing strings. Guernsey advocated a 2⅞-in.-OD string from the surface to total depth, with the following weights and grades in two intervals: 7.9-lb. EHS-150 Grayloc joint from 0-6,100 ft.; 6.5-lb. EHS-150 Grayloc joint from 6,100-50,000 ft.

A tapered drillstring was chosen on the basis of the best possible hydraulics and high torsional strength. The drillstring selected by Guernsey would be made up of 5½-in., 24.7-lb., 135,000-psi.-yield-strength pipe from 0-13,000 ft.; 4½-in.-20-lb., BRV (vanadium), 150,000-psi.-yield-strength pipe from 13,000-19,600 ft.; and 3½-in., 15.5-lb., BRV, 150,000-psi.-yield-strength pipe from 19,600-50,000 ft.

Extreme downhole temperatures probably would be the biggest problem faced in completing and producing a well at depths approaching 50,000 ft., according to Harold Kelley, of Phillips Petroleum Co.

Kelley pointed out that most jet perforators will self-detonate at temperatures of 360-365F, though one company now is able to perforate at 430F by using a 3-in. or larger steel-carrier gun.

Present-day logging equipment also would have to be modified, according to Kelley. Most rubber-covered insulators are ineffective at temperatures above 450F. Available plastics for insulation can boost working temperatures to about 600-700F. Electrical components, however, would have to be redesigned.

Kelley said it would be possible for the average temperature of the tubing and casing strings to increase more than 200F after produced fluids had increased the surrounding earth temperature. A 200-degree increase in temperature would tend to increase the length of a 50,000-ft. tubing string from 65 ft. to 100 ft.

Recommended steps to minimize buckling and bending of pipe near the bottom of the hole include:

(1) cementing tubing and casing from top to bottom; (2) providing a telescoping tubing joint above, below, or within the downhole packer; (3) providing a tension-adjusting type wellhead; (4) adjusting tubing and casing loads at the wellhead when setting the tubing string.

The tremendous surface pressures and temperatures would present another big production problem, said Kelley.

For a shut-in dry-gas well having a bottomhole pressure of 50,000 psi., the wellhead pressure might be expected to be 42,000 psi.; it would be 18,500 psi. for a bottomhole pressure of 25,000 psi.

If a productive zone at 50,000 ft. outcrops at the surface, or is connected to a permeable outcrop, the bottomhole pressure would probably range from about 24,000-28,000 psi.

On the other hand, Kelley continued, if the reservoir fluids are trapped in a closed faulted segment, the formation pressure would approach 50,000 psi. because of overburden.

Choking sufficient to drop temperatures of produced fluids in today's wells, thereby permitting gas-liquid separation, likely would not be adequate with wellhead temperatures above 400F. Auxiliary cooling of the flow stream would thus be necessary.

Both metallurgy and basic designs of present Christmas trees would require improvement.

Present rubber and lead components are completely inadequate for withstanding the high temperature and pressure differentials anticipated

New Mast for Service Contractors

This telescoping mast is said to save transportation and rigging-up time for service contractors. Developed by Fox Equipment & Derrick Co., of Ft. Worth, the mast takes the place of double-pole telescoping units. It is fabricated in two sections and makes heavy use of internal guys, rather than dead men. Sidewind stabilizers, available as optional equipment, eliminate the need for side guys, even in very high wind, the company reports.

The top section of the mast is an open-front design that permits normal clearance for the traveling block. The bottom section provides support for the racking platform.

No auxiliary or hydraulic equipment is needed to raise the Fedco mast. Extended in operating position, the mast has an over-all height of 65 ft. It has a static hook-load capacity with four lines to traveling block of 90,000 lb. with A-7 angle legs, and 135,000 lb. with Manten angle legs. Average road length with crown block is 35 ft.

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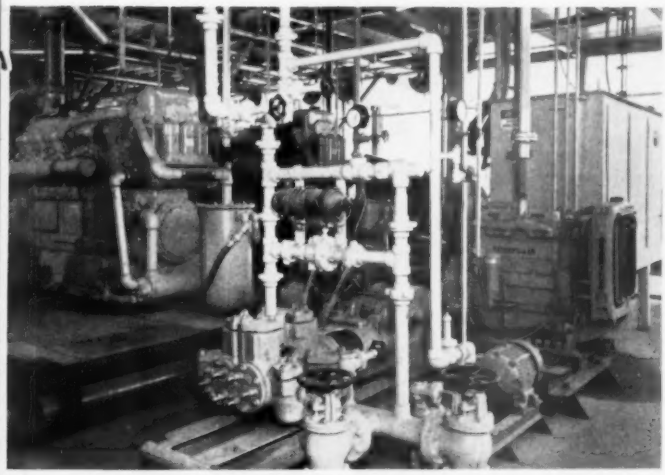
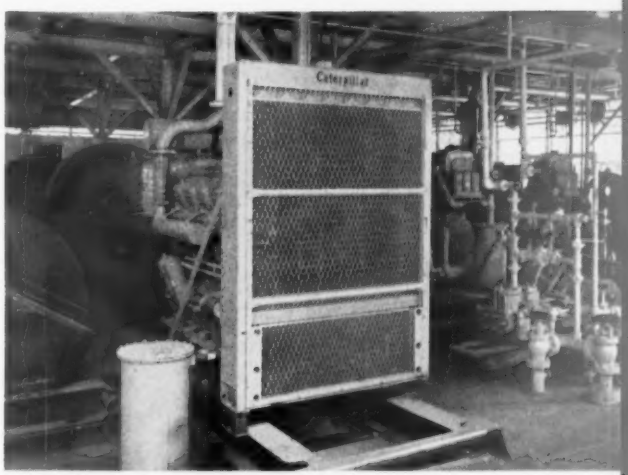
CONTINENTAL-EMSCO COMPANY, Dallas, uses 18 Cat Engines for auxiliary and prime power on the two Lake Maracaibo Drilling Tenders shown here. The tenders are 180' long with 70' beam and 11' 3" draft. Each is equipped with a helicopter deck, 45' x 83'.

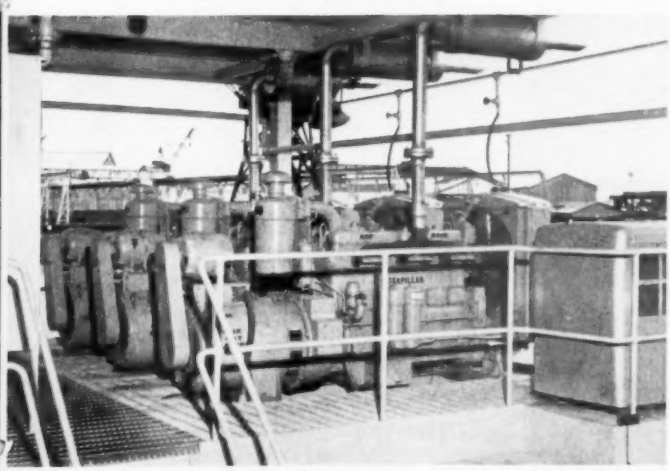
buy "in-stock" oilfield equipment to have top quality throughout



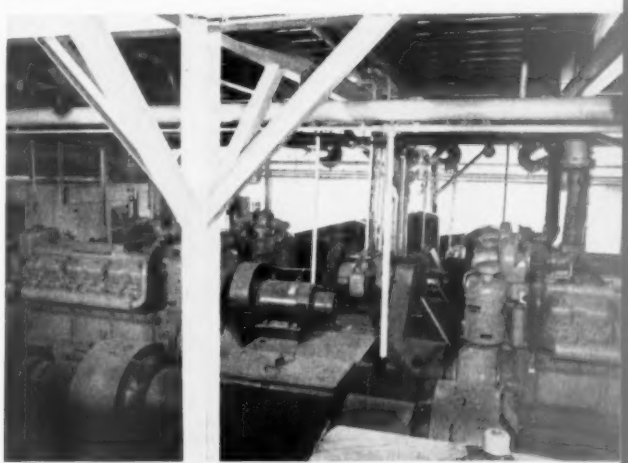
A MODERN, HEAVY-DUTY CAT D311 ENGINE (right) drives a Gardner-Denver FG-FXG 5" x 6" pump on each tender. These Cat-powered duplex pumps supply raw water for washing down rigs and keeping tenders clean. The D311 is rated at 65 HP. Other Caterpillar Engines range up to 650 HP (maximum output capacity).



HERE A CATERPILLAR DIESEL D375 ENGINE supplies power for a Gardner-Denver mud pump on each tender. Continental-Emsco Company finds the D375 an excellent power-match for the 7¼" x 14" Model FK-FXK pump. Every Caterpillar Engine and Electric Set is built to meet heavy-duty demands.



THREE CAT D318 DIESEL ELECTRIC SETS provide all A.C. electric power for each tender. Uses include excitation for the D.C. rig drive equipment, the generator and motor blowers, mud mixers, water and fuel pumps, and lighting for rig and living quarters.



FOUR TURBOCHARGED CAT D397 DIESEL ENGINES drive Continental-Emsco "Del Lago" type compounding transmissions on each tender. The rigs, intended for service on Lake Maracaibo, Venezuela, have a drilling depth of 12,000 to 15,000'.

Caterpillar's own foundry casts engine blocks of a special high-tensile strength alloy, 50% stronger than ordinary gray iron castings. Numerous ribs and partitions provide further strength.

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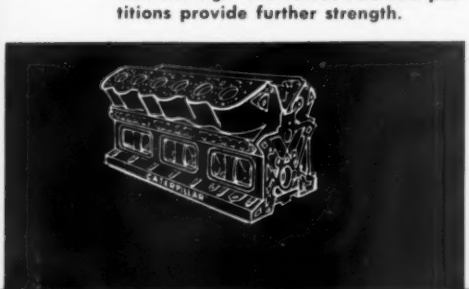
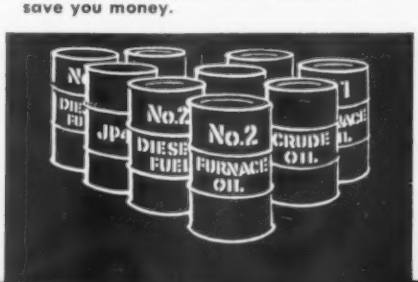




in a 50,000-ft. well, and new materials would have to be developed, Kelley added.

Since hydrocarbons encountered at 50,000 ft. are likely to be gas or gas condensate, no artificial-lift problems are expected.

Even so, some difficulties would arise. Kelley noted that trace amounts of carbon dioxide or hydrogen sulfide would have sufficient partial pressures to cause severe corrosion at elevated temperatures. Present inhibitors and protective coatings would be worthless at 800F.

With the single exception of gas-lift, Kelley said, all other existing types of artificial lift would be entirely inadequate at 50,000-ft. levels should oil production with low gas-oil ratio be encountered.

For example, he said, a sucker-rod string to handle a 1-in.-diameter plunger at 50,000 ft. would have to be 6½ in. in diameter at the top of a perfectly tapered string to stay within a rod unit stress of 40,000 psi. The polish rod load would exceed 1⅓-million lb.

Hydraulic-lift systems and bottom-hole electric-motor-driven turbine pumps also would be impractical, he said.

Power Sub Developed for Light Drilling

A hydraulic power sub that eliminates kelly, rotary table, and rotary drive for shallow to medium-depth drilling and workover operations is now on the market.

The sub, which was developed by Fred E. Cooper Inc., Tulsa, is designed to rotate the drill string with hydraulic power. It is positioned just under the swivel (picture) and above the drill pipe. Flexible hose connections permit it to ride up and down in the derrick.

It is provided with a torque arm that travels on a stabilizing line strung in the derrick to prevent it from rotating with the drill string.

Cooper engineers say the sub will work with any standard swivel, and that it can be easily transferred from one rig to another.

Originally designed for light drilling and workover operations, the sub is now being built in a heavier model for medium-depth drilling.

The smaller size, which Cooper calls Hydra Sub Model 6030, requires 21 gal. per minute of fluid at 2,000 psi.

It can be powered by the hydraulic system of any rig equipped with hydraulically operated mast, or the units used with most power tongs.

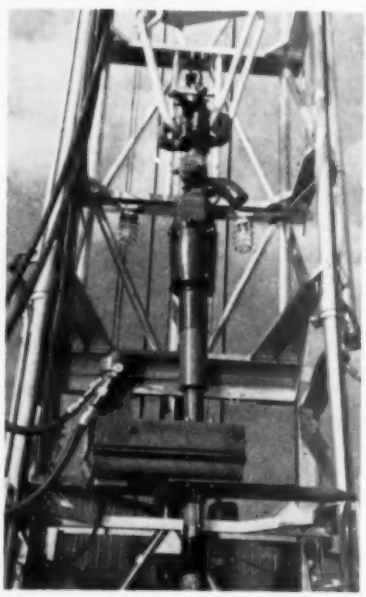
The larger sub, Model 6060, requires a fluid throughput of 43 gal. per minute at 2,000 psi. when used at its maximum rating.

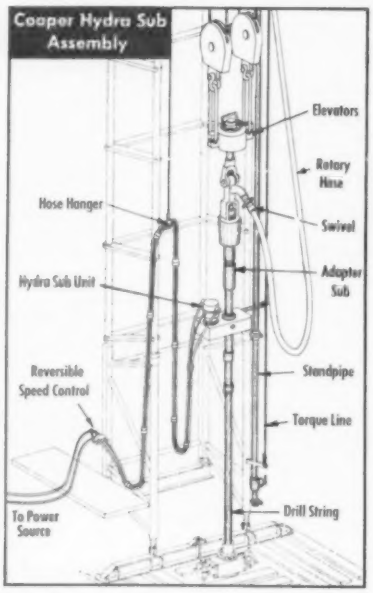
This larger model is designed for ordinary drilling to depths down to 6,000 ft. Auxiliary power is required.

Skid- or trailer-mounted hydraulic power units are available for either model of the tool.

The units are powered by gasoline, LPG, or diesel engines, and come equipped with additional connections for other hydraulically operated tools, such as blowout preventers and power tongs.

The trailer-mounted unit is built so that the entire hydraulic power unit can be skidded from the trailer. A mounting is provided on the trailer for the sub itself during transport.





HYDRAULIC POWER SUB is positioned under the swivel and above the drill pipe.

The tool has been put to numerous uses during initial field trials in Texas, Oklahoma, and West Virginia.

It has proved especially well suited for continuous coring, since the string never has to be raised to add drill pipe (no kelly). This keeps the bit on the bottom at all times and minimizes the possibility of losing a core.

Lack of kickback, plus the adjustable torque control, also make the sub valuable for milling operations and drilling out plugs and bridges.

The sub has been used for all types of fishing jobs and internal pipe cutting operations.

Some of the typical uses:

- Milling out a cast-iron plug in a 6,700-ft. workover operation. Pipe was rotated at 80 to 90 rpm. with a weight on the tool of 6 to 8 points. Hydraulic pressure was 1,100 psi.
- Drilling out a 35-ft. cement plug in an 8,000-ft. directionally drilled hole. Pipe was rotated at 70 to 85 rpm. The well was recompleted at 7,500 ft. by cementing and redrilling a directional hole.
- Initial drilling of shallow (1,800-ft.) oil wells in northern Oklahoma. Drilling was with 3½-in. pipe and 6⅜-in. bit through cherty formations where bit life was only 6 ft.
- Working over a West Virginia gas well without fluid in the hole. Contractor reported smooth pipe rotation and no windup of the string.

Both the cost and the weight of the new tool are said to be comparatively low.

The Model 6030 weighs 1,000 lb. The Model 6060 weighs about 250 lb. more, including heavier hose, etc.

Cooper prices its Model 6030 at $3,300 and the larger model at $4,800 (with trailer-mounted hydraulic system).

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What's New / IN EXPLORATION, DRILLING, PRODUCTION

Texas Court Nullifies 'Severed' Interest Tax

The Texas Supreme Court has ruled against Dallam County's system of taxing "severed" mineral interests at a higher rate than those retained by surface owners.

But, the court declared, the Federal Land Bank of Houston, which owns 80,000 acres of mineral interests in the county, failed to prove how much excessive taxes it was required to pay on the test tract.

The court test applied only to a 320-acre tract. The county had sued the bank for $8.20 in delinquent taxes for 1954 on mineral interests that had been separated from surface ownership.

The county in 1954 assessed several mineral interests at $1 per acre; and oil and gas royalty at 50¢ per acre. The assessment on mineral interests was cut to 75¢ per acre in 1955-56.

The court said that where the mineral interests were retained by the landowner, the taxes were no higher than on land without oil and gas rights. This and other factors, the decision continued, made the program invalid.

Evidence showed that 48% of the minerals—those retained with surface ownership—were untaxed, while 53% —the minerals severed from surface ownership—were taxed.

•

Leasing News

Alaska's first offshore lease sale drew bids totaling $4,021,031.

Highest bid of last week's sale was made jointly by Union Oil Co. and Ohio Oil Co. The two companies offered $1,001,123 for a 2,026-acre tract south of the Kenai River on the Kenai Peninsula.

Some 65 bids were made on the 32 tracts, totaling 87,981 acres, which were offered (PW—Nov.20'59,p34).

A high bid of $5.50 per acre was offered at the Dec. 4 sale of 14 parcels of Nebraska state land.

Frank Rose, of McCook, Neb., paid the top price for a partial section in Redwillow County.

The Alberta government received $1,210,691 at its recent sale of drilling reservations on 131,891 acres.

High bid was made jointly by Skelly and Tidewater; they offered $255,555 for 7,520 acres north of Pembina field.

A total of 166,291 acres were offered, but five parcels totaling 34,400 acres failed to sell.

Relatively little interest was generated in the regular monthly sale of leases on Colorado state lands.

Only 18 of 85 tracts offered were leased at the Dec. 2 sale. Of the 33,137 acres put up for lease, slightly more than 7,000 were taken, with 15 of the tracts going for no bonus. Top bid was $3 per acre for a 160-acre tract in Logan County.

British Columbia's first sale of oil and gas exploration rights next year will be held Mar. 17.

Interest is expected to center on areas north of the Peace River district, as a result of the government's recent approval of a 200-mi., $9.5-million crude line from the Beatton River-Milligan Creek area to pipeline connections at Edson.

Companies, however, are permitted to propose that Crown lands in any part of the province be offered.

•

The Oklahoma Corporation Commission will hear an application on Dec. 23 for the state's first commercial thermal recovery project.

The application, made by Thermal Oil Producers, Inc., is for the use of in-situ combustion methods to aid oil recovery from Seay field, Jefferson County.

Plans call for the ignition of hydrocarbons in the Cisco (Pennsylvanian) at a depth of 850 ft. on a 99.73-acre lease.

Of the four wells on the tract, one will be used for air injection—a total of 3-million cf/d—and the other three for production.

Previous thermal recovery projects in the state (there have been two) were research operations.

•

Arkansas-Louisiana Gas Corp. has discovered a large deposit of bentonite in Claiborne Parish, North Louisiana.

The deposit, said to be the largest in Louisiana and possibly the Gulf South, is estimated at 700,000 tons.

Arkansas-Louisiana is considering building a plant to process the bentonite, which is used in drilling muds and refining operations.

•

The pollution damage suits filed by 143 landowners in the El Dorado (Kan.) area against 13 oil companies and individuals has been settled for some $250,000.

The farmers, who contended that oil pollution carried onto their lands by floods in 1951, 1953, and 1957 had damaged crops, originally asked for $3-million in actual damages plus $3-million in punitive damages (PW—Dec.11'59,p34).

Defendants included Cities Service, Socony Mobil, Sinclair, Magnolia (now Mobil), Consumers Oil & Gas, Lawrence Oil & Gas, Republic Oil & Gas, Olympic Oil & Gas, United Oil & Gas, Associated Oil & Gas, and Morris, Sadie L., and Loretta Sitrin.

•

The Texas Railroad Commission has approved a waterflood project for Tatum (lower Pettit) field, Rusk and Panola Counties, which will boost ultimate recovery by 4-million bbl.

Tatum Field Operators Committee, which made the application, said the project covers 6,575 acres.

•

Engineering

A new perforating method that is said to cut costs 30% has been introduced by The Western Co., of Ft. Worth.

The method, designated "Velocity" perforating, is based "on the newly discovered principle of relating mass and velocity to overcome the resistance of the target."

•

A new high-speed magnetic tape transport, said to increase life of magnetic tapes used with electronic data-processing systems, has been developed by Datamatic Division, Minneapolis-Honeywell Regulator Co.

The tape transport reads or records

information at the rate of 96,000 decimal digits per second. The company also announced development of Orthotronic Control, a system for automatically detecting and correcting errors in data processing.

•

Drilling Highlights

Texas Gulf Coast—Pure Oil Co. No. 1 Houston Farms Development Co., located 10 mi. west of Galveston, was completed as the deepest producer in Texas, flowing 1,540,000 cf/d of gas through ⅛-in. choke and perforations in the Frio at 16,132-264 ft. The wildcat, drilled to 17,051 ft., also produced 35 b/d of 50.7-gravity condensate and 60 b/d of water. The state's previous deepest producer—Phillips Petroleum Co. No. 1-A Odom, Puckett field, Pecos County—was completed in 1953. It is bottomed at 15,324 ft., and produces condensate from the Ellenburger.

Colorado—Pure Oil Co. No. 1 USA-Southeast Lisbon, section 5-44n-19w, San Miguel County, flowed gas at the rate of 2.5-million cf/d and 3.3-million cf/d on two tests through 1-in. choke above and below 8,859 ft. in a Mississippian formation.

Pure's No. 1 USA-Northwest Lisbon, section 10-30s-24e, San Juan County, Utah, 15 mi. northwest of the Southeast Lisbon test, recovered only 167 bbl. on lengthy swab test, indicating that the Devonian zone which earlier had produced a 7,000-ft. stand of oil had been mudded off in drilling. Testing continues at the prospect.

Louisiana Offshore—Union Oil Co. of California No. 1 OCS-0549, Block 35, Vermilion Area, 8 mi. off the Louisiana Coast, was dually completed for 5.1-million cf/d of gas and 253 b/d of condensate through perforations at 10,396-414 ft. and for 560 b/d of oil through perforations at 10,604-30 ft. There is no oil production within 30 mi. of the discovery.

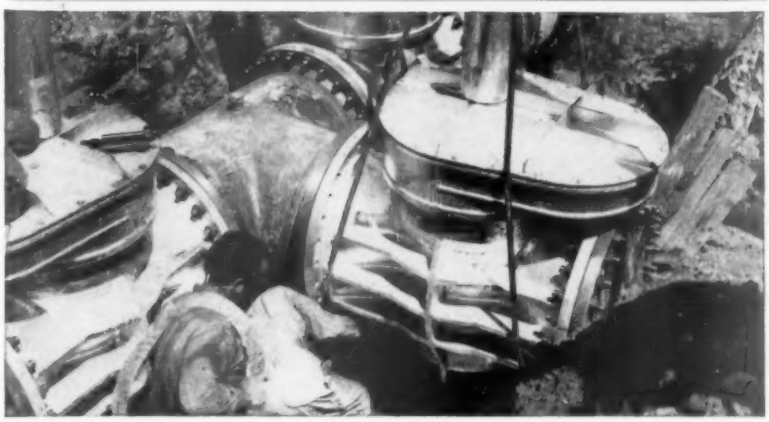
Mississippi—Gulf Coast Drilling & Exploration Co. No. 1 Magee, section 34-2n-12e, Walthall County, was completed for 160 b/d on the pump through perforations at 9,780-83 ft. in the Lower Tuscaloosa. The discovery is 2¼ mi. west of Dexter field.

Wyoming—Texas National Petroleum Co. No. 1 Govt.-Withers, section 32-20n-99w, Sweetwater County, was completed for 300 b/d of oil through 18/64-in. choke and perforations at 3,556-616 ft. in the Almond member of the Mesaverde. The discovery, in the West Desert Springs area, is 7 mi. northwest of El Paso Natural Gas Products Almond discovery on the Patrick Draw Unit, and 2 mi. north of another Texas National Almond prospect, No. 1 Govt.-Chapin, section 4-19n-99w.

New Mexico—Sinclair Oil & Gas Co. No. 1-886 State-Lea, section 16-20s-33e, Lea County, was completed for 586 b/d of 29.5-gravity oil, based on 12-hour swab of 293 b/d of oil through perforations at 3,220-32 ft. in the Yates-Seven Rivers. The discovery is 2 mi. east of Salt Lake (Yates) field and 1⅝ mi. west of Teas (Yates) field.

Oklahoma—J. M. Huber Corp. No. 1 Boos, section 35-5n-11w, Caddo County, flowed 3,320,000 cf/d of gas plus 3-4 bbl. of 35-gravity oil per hour on test of the Springer (Pennsylvanian) at 7,519-603 ft. A lower section of the Springer, at 7,928-8,056 ft., was perforated to make 10.8-million cf/d of gas with 8 bbl. of 57-gravity condensate per hour. The discovery is 6 mi. southeast of Apache oil pool.

THE COST CUTTING SERIES . . .



LUBRICATION...helps buried valves stay buried

The down time and labor costs of repairing buried valves can be eliminated by specifying lubricated plug valves (see Rockwell-Nordstrom valves in the photo above). By simply lubricating the valves periodically, metal-to-metal wearing friction is prevented, and fast, easy operation is assured. Also, pressurized lubricant creates a double seal against leakage . . . lubricant is an instantly replaceable soft seat that positively shuts off flow of the lightest gas or the heaviest liquid. Even minor maintenance and repairs are often very costly on buried, non-lubricated valves. Pipeline records prove that lubricating valves is preventive maintenance which cuts down time and labor costs. For complete details on Rockwell-Nordstrom valves and accessories, write:

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(Above) This view of Platformer LPG recovery section shows deethanizer (left) and depropanizer tower (center). Third tower (right) is Unifining Unit's stripper column.

New Platforming® unit boosts production of high-octane gasoline nearly 200%

DX Sunray upgrades product quality, boosts motor fuel production capacity, with five new UOP process units

by Harry A. Brown
Vice President of Manufacturing
DX Sunray Oil Company,
Tulsa, Oklahoma

In little more than three years after becoming the refining and marketing subsidiary of Sunray Mid-Continent Oil Co., DX Sunray Oil Co. launched a major modernization program.

Harry A. Brown

In early 1959 we placed on stream at our West Tulsa refinery a 20,000 BPSD Unifining* unit, a 12,000 BPSD Platforming unit, a 2,400 BPSD Isomerization Unit and a 2,500 BPSD HF Alkylation unit. At about the same time we added at our Duncan, Oklahoma, refinery a 6,000 BPSD Unifining* unit to an existing layout which already included a 6,000 BPSD Platforming® unit, a 22,000 BPSD Fluid Catalytic Cracking unit, a 3,500 BPSD HF Alkylation unit and a 750 BPSD Catalytic Condensation unit. Installed at a cost of $12 million, and designed and engineered by Universal Oil Products Company, our new units are the most modern available and were installed to carry out our avowed objective of marketing high-quality products.

Triples high-octane output

The four UOP units provide more high-octane gasoline than the Tulsa refinery previously manufactured. The new Platformer almost triples the output of high octane gasoline there, and addition of the new HF Alkylation unit more than doubles DX Sunray's potential for producing 105-octane gasoline. *Trademark

Being charged to the new Unifining unit is a blend of straight-run and coker naphthas for preparation as feed stock to two Platformers. These include a 7,500 BPSD reforming unit that was converted to UOP Platforming in June of 1956 and the new 12,000 BPSD unit completed this year. At relatively low cost, Unifining desulfurizes and purifies the Platforming feed stock and transforms olefins into paraffins. Combined operation with Platforming provides a most economical source for the hydrogen required in Unifining.

LPG unit recovers butane, propane

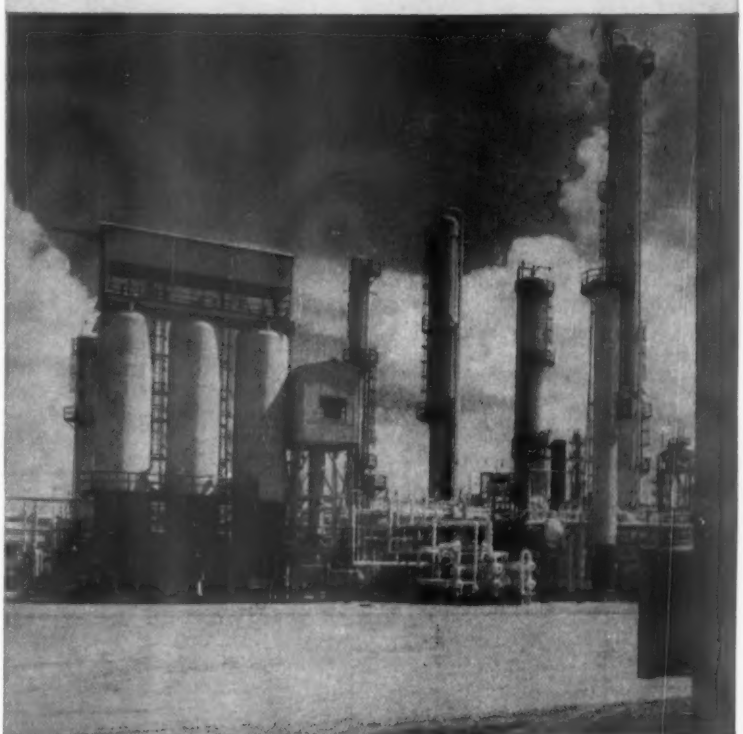
At the new Platforming unit, the Unifined, depentanized C_6-plus naphtha, or feed stock, is heated and contacted with a specially prepared platinum-containing catalyst under operating conditions to produce a C_5-plus gasoline with a leaded octane number as high as 99, if required. A rerun tower is provided for preparation of selected blending stocks. In conjunction with the Platformer there is an LPG unit designed to recover 92% butane and 60% propane.

In conjunction with the decision to modernize the Tulsa refinery, we gave careful consideration to future demands for higher-octane gasoline. Expanded facilities for alkylation, to produce motor alkylate as a blending component, were chosen since sufficient quantities of butane available in our refinery streams could be isomerized and, as isobutane, utilized as one of the feed stocks for HF Alkylation. Universal engineers, therefore, designed a 2,400 BPSD Butane Isomerization unit to service the HF Alkylation facility. The two processes are controlled and operated as a single unit.

Could produce 105-plus leaded octane

The HF Alkylation unit product is 2,500 BPSD of 105-octane gasoline blending stock. Actually, the unit would permit the Tulsa plant to turn out gasoline exceeding the 105 octane number (leaded) if market conditions should so dictate. However, DX Sunray has no immediate plans for producing motor fuels in such super ranges. If and when the need for higher-octane gasoline arises, we're ready for several years to come. Meanwhile, much of this high-octane alkylate is used to manufacture aviation gasoline. The remainder is blended with other refinery stock to produce a premium gasoline which is equal or superior in quality to any in the DX marketing area.

Combination HF Alkylation— Butane Isomerization unit assures potential production of super-octane gasoline



View of DX Sunray's Isomerization unit showing three reactors at left. Second tallest tower (center) is the debutanizer column. Deisobutanizer (right) is the highest refinery tower in Oklahoma.

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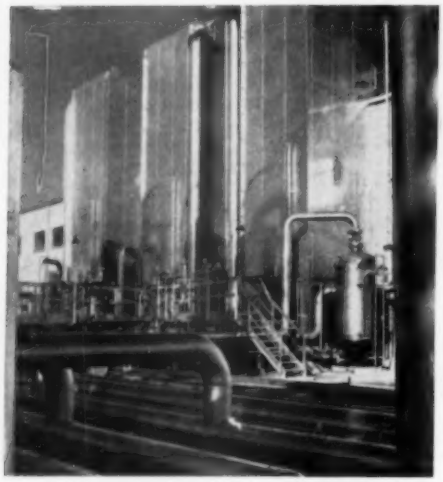
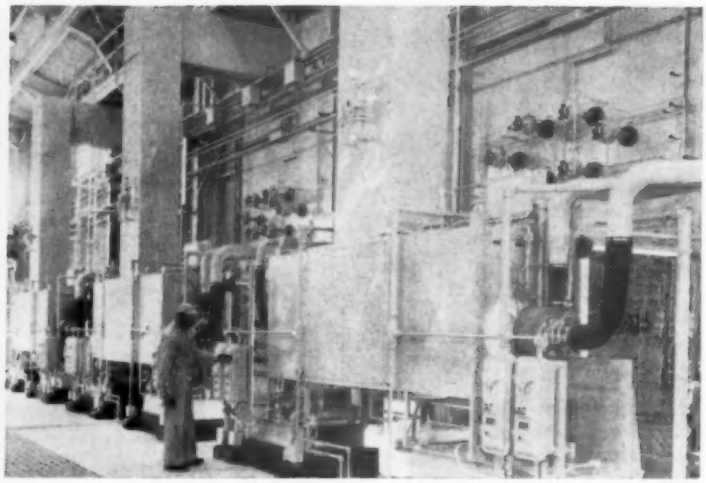




HIGH-SPEED EXPANDERS boost the efficiency of this Bureau of Mines plant at Keyes, Okla., where . . .

Deep Refrigeration Extracts Helium

Ultra-high-speed turbo-expanders, which provide fast refrigeration, are the key to the efficient operation of the U.S. Bureau of Mines new plant at Keyes, Okla., for the extraction of helium from natural gas.

These expanders were designed and built by Air Products, Inc., of Allentown, Pa. It is the first time, the company says, that high-speed turbo-expanders have been used in a helium extraction plant, an innovation which, it adds, increases refrigeration efficiency substantially.

The basic principle applied at Keyes for the separation of helium from the other components of the natural gas is similar to that used in other Bureau of Mines helium plants.

At very low temperature—below —300F—almost all of the components of the gas are liquefied, while helium is still in gaseous form. It can thus be separated and sent to the purification unit, or to storage.

The main cooling medium, which reduces the temperature of the gases in a series of heat exchangers, is liquid nitrogen, which circulates at a temperature below —300F (diagram, below).

To obtain that very low temperature for the liquefaction of nitrogen, "isenthropic" expansion is utilized. Isenthropic expansion occurs when a fluid expands while simultaneously producing work.

When a compressed gas simply expands—for example, by escaping through a valve—its temperature is reduced. But when, during the expansion process, the energy released is utilized to produce work—to generate electricity, or, as in the case of the Keyes plant, to drive a blower—its temperature reduction is considerably greater.

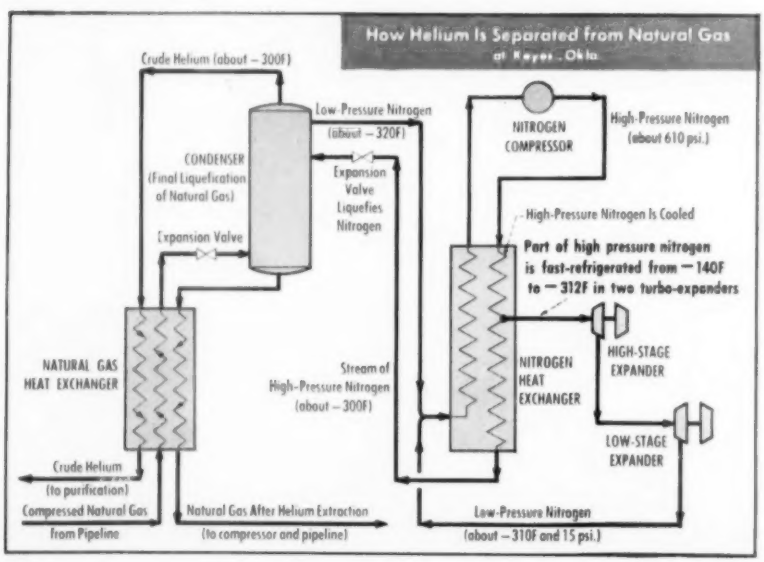
Two high-speed turbo-expanders are used in series, at Keyes, to reduce the temperature of the nitrogen. Each of these expanders drives a blower.

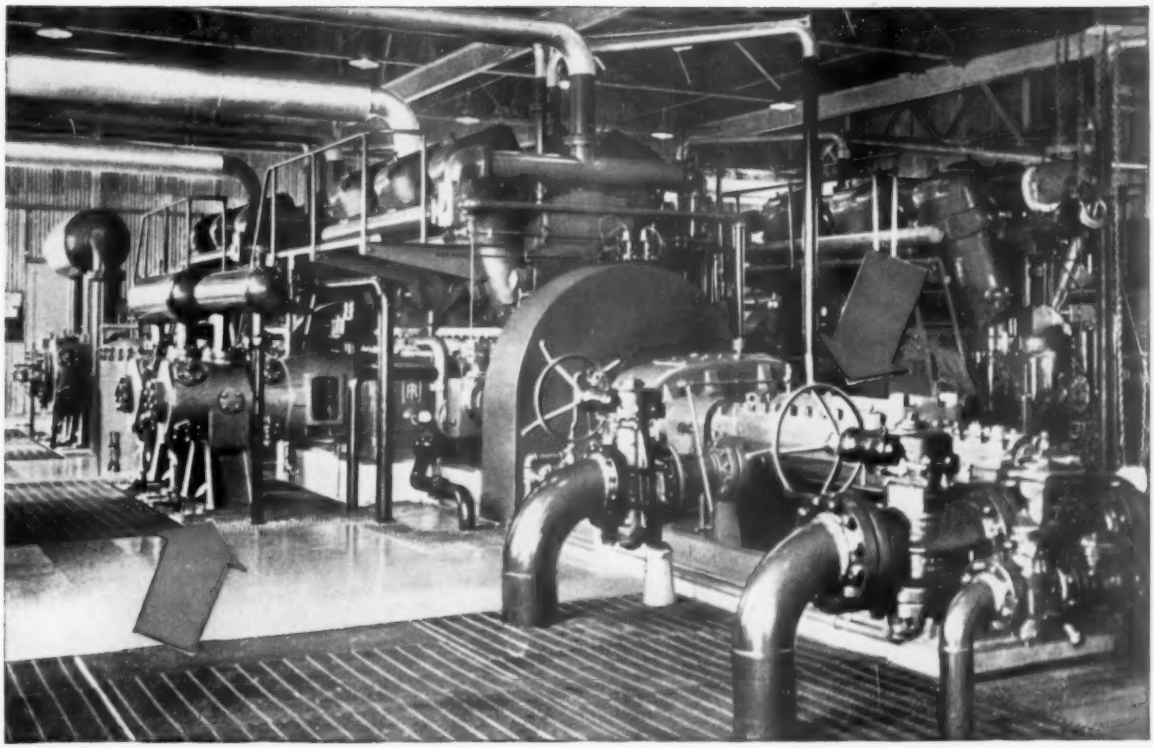
The first, "high-stage" expander reduces the nitrogen pressure from 610 psi. to 140 psi., at the same time reducing its temperature from —140F to —230F. It rotates at 67,100 rpm. The second, "low-stage" expander further reduces the nitrogen pressure, at the same time bringing its temperature down to about —312F. It rotates at 29,700 rpm.

One stream of high-pressure, gaseous nitrogen, thoroughly refrigerated in the nitrogen heat exchanger, then passes through an expansion valve, where it becomes liquefied. That portion of the nitrogen performs the final liquefaction of the natural gas components from which the helium is separated.

The natural gas is processed, at Keyes, in three identical crude-helium recovery units.

Air Products claims that at least





DOUBLE-DUTY GAS-ENGINE COMPRESSORS

compress recycle gas *and* drive lean oil pumps

At Skelly Oil Company's Schafer gasoline plant in Skellytown, Texas, the two Ingersoll-Rand 660-hp KVG gas-engine compressors shown above serve dual functions: they compress recycle gas *and* pump lean oil!

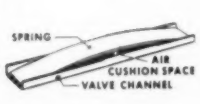
In addition to its built-in compressor cylinders, each gas-engine unit also drives an Ingersoll-Rand HMTA eight-stage centrifugal pump, connected to the flywheel end through speed-increasing gears. The two compressors handle 4 to 5 million cubic feet per day of recycle gas at 335 psia intake, 845 psia discharge. And the pumps circulate 906 gpm of lean oil to the absorber at 875 psi.

These versatile 4-cycle V-angle engine-compressors can be used for compression alone, for pump drive alone, or for simultaneous pumping and compression. Compared to the normal practice of using separately-driven pumps, the combination units result in substantial savings in equipment cost, space and installations costs, and operating expense.

Special applications like this are made possible by Ingersoll-Rand's flexible, 4-cycle V-angle engine design, with its excellent balance and smooth-running characteristics under any load and at any speed down to half. Other I-R engine-compressors are in use at the same plant, and their dependable performance was influential in the selection of the double-duty machines.

For maximum economy and dependability, it will pay you to check the unique advantages of Ingersoll-Rand 4-cycle V-angle diesel and gas-engine compressors and power units. Your I-R representative will be glad to give you complete information.

ONLY I-R COMPRESSORS HAVE CHANNEL VALVES



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92% of the helium contained in the gas is being recovered. The helium coming from these units is 90% pure. It is further purified in another unit, over activated carbon, at —275F, and can be brought, if desired, to a degree of purity of 99.995%.

The Keyes plant is the Free World's largest plant in the volume of helium recovered from natural gas.

It processes 70-million cu. ft. of natural gas daily, and produces an average of 30-million cu. ft. of helium per month. This amount equals the combined output of all other helium plants in the U.S.

Fluor Corp., Ltd., built the plant for the Bureau of Mines, and Air Products supplied the low-temperature process equipment.

The Bureau of Mines is contemplating the erection of 12 such major helium recovery plants at a total cost of about $200-million.

The U.S. production of helium in 1959 came up to only 76% of the demand for this gas, and the need for helium is growing constantly. In addition to its conventional use to inflate lighter-than-air craft, helium is now used for missile and atomic research developments.

The U.S. has the richest known deposits of helium in the Free World —mostly in Kansas, Oklahoma, and Texas. The Keyes field, for example, has a concentration of 2% of helium in its natural gas; this is well over twice the average concentration.

The producers of natural gas—in the Keyes field, it's Colorado Interstate Gas Co.—receive compensation from the Bureau of Mines.

That compensation covers the actual reduction in the volume of gas due to the extraction of helium, plus a bonus reflecting the additional value of helium over fuel gas.

Bonded Aluminum Cuts Sulfide Scaling

Sprayed and heat-diffused aluminum coatings will play an ever-increasing part in the protection of refinery equipment against the attacks of sulfur in the presence of hydrogen, according to information given to PETROLEUM WEEK by both manufacturers and users.

Because of the inertness of aluminum in the presence of hydrogen and hydrogen sulfide, it has long been used as a protective coating on carbon steel or on low-alloy steel, in applications where sour stocks were being treated.

This has been done in several ways. It was first accomplished by heating the parts to be protected at 1,500-1,800F for several hours, in a mixture of aluminum and aluminum compounds, to form a relatively thick layer alloyed with aluminum on the surface—a process known as calorizing.

Later, the coating was applied by dipping the part, after a special preparatory treatment, into a bath of molten aluminum.

Direct application of aluminum by metal spraying was also used.

These processes have proven the resistance of aluminum against sulfidic corrosion. But all had some objectionable features. Users say that the adherence of aluminum on steel, when it is simply sprayed, is not sufficiently reliable, and that the thicker alloy coatings are brittle and tend to spall. Dipping is a delicate, often expensive, operation and, with the equipment now available commercially, is not practical for large vessels and long tubes.

On the other hand, sprayed aluminum, after it has been adequately heat-diffused, seems to answer these objections. For the past few years, heat-diffused aluminized coatings have been tested on heat exchanger and heater tubes, both externally and internally. These tubes were installed in several refinery units, where they were subjected to severe sulfide attack as well as to some abrasive erosion.

Following successful applications to furnace tubes, sprayed and heat-diffused aluminum has been recently applied inside of relatively large vessels, such as reactors of desulfurizing units in preparation or catreforming.

This application is only a few months old, but the users, in the Middle West, are optimistic about the results. Another such reactor is currently being completed for an eastern refinery, and four more are scheduled to be on stream early in 1960.

Apparently, the objectionable scale produced, even with low-alloy steel linings, in the presence of hydrogen and hydrogen sulfide at the critical temperatures of these reactors, has been eliminated by the use of this process.

The protection yielded by the heat-diffused aluminizing process appears to be due to the diffusion of the aluminum into the steel of the vessel, forming a protective alloy bond layer of as much as 0.02 in. (20 mils).

According to Albert Schroeder, of Chicago Metallizing Corp., which developed the Alumi-Spra process, the thickness of the pure aluminum sprayed coating decreases during the heat diffusion treatment, while the thickness of the aluminum-steel-alloy bond increases proportionately.

An important development is now in progress in heat-diffused aluminizing: it will soon be possible to apply the process to vessels installed in the field.

This work is being conducted by Chicago Bridge & Iron Co., which was instrumental in the gradual development of the aluminizing process as one of Chicago Metallizing Corp.'s licensees.

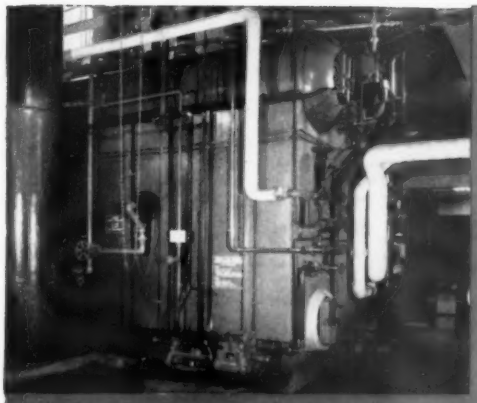
"Inasmuch as the heat-diffusion of the aluminum coating could be accomplished in a manner similar to the conventional stress-relieving operation of pressure vessels," says L. A. Butler, CB&I engineer, "it should be applicable in the field, where our company has acquired considerable experience in the technique of stress-relieving of vessels of almost any size. It is by no means a simple operation, however. It must be performed in a strictly reducing atmosphere, and with great thermal uniformity throughout the entire mass of the vessel treated."

The success of the heat-diffused aluminizing process depends principally on the skill of its application, according to Dr. Carl H. Samans, associate director of engineering research of Standard Oil Co. (Ind.).

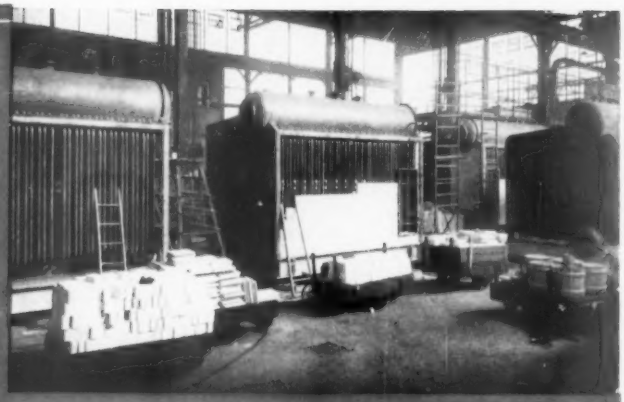
The preparation of the surface to which aluminizing will be applied is very important. It is much more than a mere sandblasting job. Then, the aluminum is sprayed—usually with a conventional spray gun, using aluminum wire. The stress-relieving operation, during which aluminum is heat-diffused, is accomplished slowly, at a suitable temperature above the melting point of aluminum (1,220F), and must be carefully controlled.

"If it is too cool," says Dr. Samans, "the bond will not be good enough; if it is a little too hot, some of the aluminum runs off. And it must be done very uniformly."

One midwestern refiner is seriously considering the application of the process to protect the inside of a coke drum, but has not yet made a final decision.



A 15,000 lbs/hr unit in a boxboard plant



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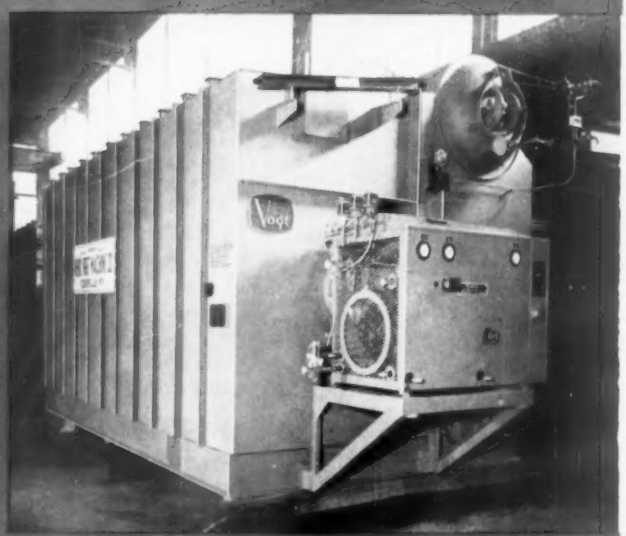
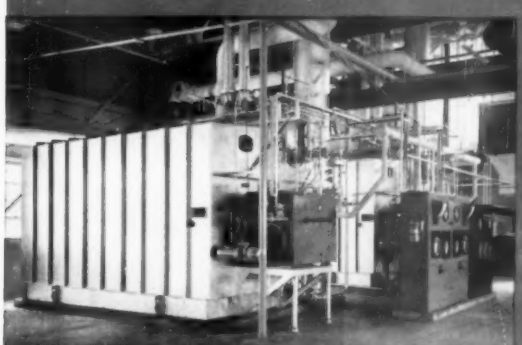


One of two 30,000 lbs/hr units for a hospital

This 18,000 lbs/hr unit is one of two for an office building



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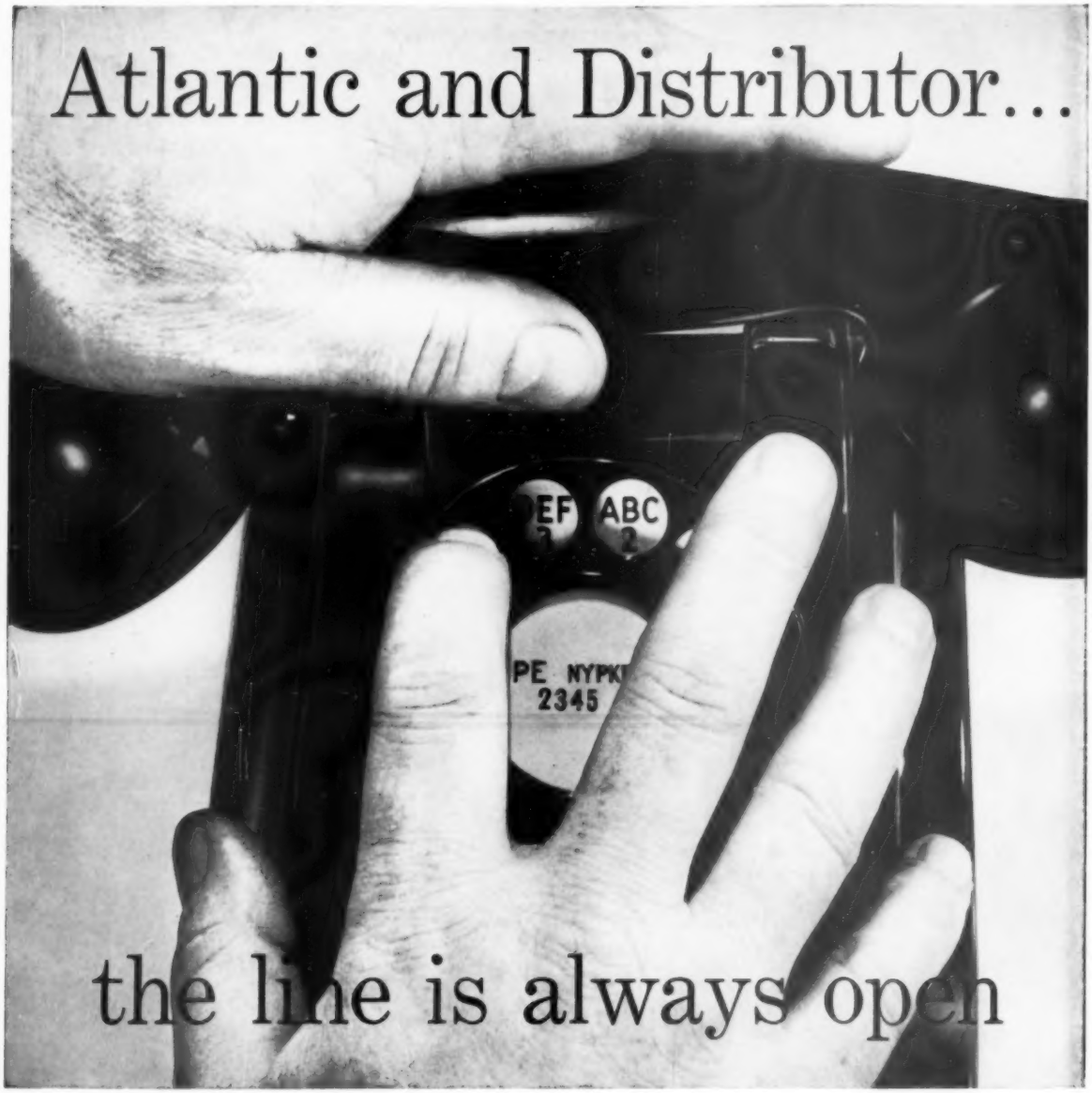

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ATLANTIC

The Atlantic Refining Company

What's New
IN PROCESSING

Ohio Oil Co. announced plans last week to build a gas processing plant to serve the Scipio, Pulaski, and Albion fields in south-central Michigan.

It will be an absorption-refrigeration type unit, with vessel capacity of 25-million cf/d, and compressor capacity of 10-million cf/d.

Initially, the plant will produce 40,000 gal. of liquefiables daily, to be eventually boosted to 65,000 gal.

Liquids to be extracted are propane, and a mixture of butane and natural gasoline.

Stearns-Roger Mfg. Co., of Denver, is handling design and construction.

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A 4,700 b/d cat reformer is planned for the Port Credit (Ontario) refinery of Regent Refining (Canada), Ltd., a subsidiary of Texaco Canada Ltd. The unit, which will replace one of 2,000 b/d capacity, is designed to improve the quality of the refinery's gasoline.

Catalytic Construction of Canada, Ltd., will build the $1.5-million reformer, scheduled for completion by September, 1960.

•

Russia hopes to be in the polystrene business by next year.

The Soviet Union has placed an order for a $1.8-million chemical plant with a British firm—P.G. Engineering, subsidiary of Power-Gas Corp., Ltd.

Capacity is said to be 9,000 long tons annually.

•

Olefane—a high-clarity, high strength polypropylene film—is now in commercial production at AviSun Corp.'s New Castle (Del.) plant.

Polypropylene from AviSun's recently completed unit at Port Reading, N.J., will be used to produce 10-million lb. of Olefane a year.

AviSun was formed earlier this year as a joint subsidiary of Sun Oil Co. and American Viscose Corp.

•

Goodrich Gulf Chemicals, Inc., will start producing polyethylene next year. The company is now building a plant adjacent to its synthetic rubber facilities at Port Neches, Tex. Initial capacity: 13-million lb. a year of high density polyethylene.

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Canadian Gas Export Plan Gains Favor

The plan of four Canadian and four U.S. companies to boost Canada's natural gas exports to the U.S. West Coast by 654-million cf/d appears to have a good chance for approval on both sides of the border.

Canada last OK'd a gas export proposal in 1956, when it authorized West Coast Transmission Co. to supply gas to Pacific Northwest Pipe Line Corp. (PW—May4'56,p28).

Since then, Canada has frozen exports. A thaw is in the air, however.

And the U.S. Federal Power Commission is also expected to act favorably—although it may insist that some changes in the proposed contracts be made first.

Basically, the $331-million project involves construction of a 1,353-mi. pipeline from west-central Alberta to San Francisco by these four companies (map):

Alberta Gas Trunk Line Co., Ltd.: a 336-mi. section from the Berland River to Coleman, Alta., near the British Columbia border, at a cost of $97-million.

Alberta Natural Gas Co.: a 107-mi. section from Coleman to Kingsgate, B.C., near the Idaho border, at a cost of $40-million.

Pacific Gas Transmission Co.: a 614-mi. section from Kingsgate to Klamath Falls, Ore., on the California line, at a cost of $130-million.

Pacific Gas & Electric Co.: the final 296-mi. stretch from Klamath Falls to near San Francisco, at a cost of $70-million.

In addition, Pacific Northwest Pipe Line Corp. plans a spur from Pacific Gas Transmission's proposed line to its own at Spokane.

The gas would be exported by Alberta & Southern Gas Co. and West Coast Transmission Co. to Pacific Gas Transmission Co. (458,750,000 cf/d), and Pacific Northwest Pipe Line Corp. (165-million cf/d).

Pacific Gas Transmission would deliver the gas to Pacific Gas & Electric, its parent company, at Klamath Falls, for distribution in California.

Pacific Northwest wants to sell its gas in the Pacific Northwest.

Additionally, Canadian-Montana Pipe Line Co. plans to take 30-million cf/d from Alberta Gas Trunk Line at the Alberta-Montana border.

In a separate project, El Paso Natural Gas Co. wants to extend its

Portable X-ray unit used by CB&I to inspect welded seams on field erected work.

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line southwesterly to southern California.

Though unrelated from a construction standpoint to the proposed new Canada-U.S. line, this extension would mean wider distribution of Canadian gas now being received from West Coast Transmission Co. at Sumas, Wash.

Capacity of the line would be 400-million cf/d. Half would come from Colorado Interstate Gas Co., which would build part of the line. Pacific Northwest, a subsidiary, would deliver the other half through its pipeline from present Canadian supplies.

The recent announcement by Canada's National Energy Board that it will reach decisions on the project within six weeks after scheduled Jan. 5 hearings—in ample time for a spring construction start—is taken as a sign NEB intends to give approval (PW—Dec.11'59,p51).

The hearings will be NEB's first on a gas export plan.

Export permits for 25 years were granted to the companies by the Alberta Gas Conservation Board early this fall, after only a one-day hearing. The permits cover a total of 2.3-trillion cu. ft. of gas. Shortly thereafter, Alberta O.K.'d construction of the northernmost leg of the line (PW—Nov.6'59,p122).

The Alberta board, however, still must approve a boost in exports to 4.2-trillion cu. ft. over the 25 year period to cover proposed export agreements between the Canadian and U.S. companies.

And final authority over all new pipeline construction and gas exports now rests with NEB.

Most Canadian oil men feel that NEB, together with most of Canadian industry, feels that increased exports would geatly benefit Canada—and, secondarily, the U.S., as well.

The companies involved in the Pacific export project are looking to NEB Chairman Ian MacKinnon, long-time head of the liberal Alberta Gas Conservation Board, to bring some of his liberal export attitude to bear on a Dominion level.

A top official of one of the companies says hopefully, "MacKinnon was chairman of the Alberta board when it issued the permits. He's just wearing another hat now, so why shouldn't he approve?"

Moreover, Canadian officials and industry leaders now generally agree that their country's 30-trillion cu. ft. of established gas reserves will far exceed domestic demand for years to come.

In a recent report, the Canadian-American Committee, a group of top U.S. and Canadian businessmen formed to strengthen intercountry economic ties, said:

"One is tempted to advocate a policy whereby Canadian gas would be used primarily to serve markets within a 1,500-mile radius of Alberta."

Two other specific aspects of the current Canadian-U.S. West Coast plan also bolster hopes for its approval.

First, several Alberta utilities not only do not oppose the project, but they favor it as "beneficial for the province."

Contracts between Alberta utilities and the two export companies involved in the plan provide "insurance that future requirements will be supplied," according to Bruce F. Wilson, executive vice-president of Canadian Western Natural Gas and Northwestern Utilities.

Second, the section of the line that would be built by Alberta Natural Gas would be financed entirely in Canada, and NEB is known to prefer Canadian financing.

Approval also seems to be gaining before the Federal Power Commission, which resumed examiner's hearings on the plan last week.

Actually, only two aspects of the plan come under FPC jurisdiction: the interstate portion of the U.S. section of the line to be built by Pacific Gas Transmission, and the plan of that company and Pacific Northwest to import the gas.

At the hearings, the project drew only minor opposition. Coal industry spokesmen said they were inclined to favor Canadian exports into areas where coal isn't a competitor.

"No intervenors are expected to object to the project as a whole, so the deal looks most favorable at present," one observer reports.

Before reaching any decision, however, FPC is expected to weigh heavily the price that will be charged for the gas and the possibility of cancellation of the export license by Alberta, in the event of a gas shortage there.

Ross A. McKimmie, counsel to Alberta & Southern, told FPC that Alberta has the right to alter its export licenses. He added, however, that he thought "the Canadian government would stand by its 25-year export permits."

FPC voiced the fear that the financing of part of the project in Canada at higher interest rates than are charged here might boost the gas price.

K. C. Christensen, Pacific Gas Transmission vice-president and treasurer, answered that the higher money rates would have "only a minor effect" on the cost of the gas.

FPC said further that export contracts already signed between U.S. and Canadian companies don't permit enough price control at the border, and it's expected to hold out for a clause that will make border prices predictable for "at least eight years."

A spokesman for Pacific Northwest says that the price has to be expected to fluctuate with changes in the cost of the gas itself and in transportation charges.

He says he doesn't know what price will be asked initially, or later.

Pacific Northwest currently is paying 22¢ per Mcf. for the gas it buys from West Coast Transmission.

'Fish' Locates Underwater Pipelines

Shell Oil Co. reports that a new electronic pipeline locator of its own development—succinctly called a "fish"—is proving a "valuable and successful" tool in locating underwater lines, prior to placing well jackets.

Formerly, Shell says, it was almost impossible to determine accurately the location of lines. This posed the danger that a line would be smashed by one of the 50-ton to 100-ton jackets. Now this threat is eliminated, Shell says.

"In fact, I don't see how we managed to get along without it," a spokesman reports. "I sure wouldn't want to now."

Shell is using the new detector to locate lines in the Gulf off Louisiana.

As the 200-lb., fish-shaped device is towed along the Gulf floor, it generates an electro-magnetic field. Disturbance of this field by a pipeline, or other ferrous materal, is recorded on shipboard, and its location is charted.

Similar devices have been in use for some time. But Shell makes these new claims for its locator: minimal interference from salt water and variations in "soil formations"; depth location to within 3 to 6 in., providing the pipe size is known.

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Home Oil, along with other oil marketing companies, derives an additional benefit—being able to protect employees through a Group Insurance Plan designed under the auspices of the O.P.M.A. by New York Life. This insurance offers financial assistance to families if the wage earner dies —also helps relieve the financial burden should he or a member of his family require medical care.

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600-foot length of Thermoid-Quaker hose, self-propelled both off and on the reel, floated on inflatable rubber "sausages."

Quaker Thermoid floating ship-to-shore rig helps speed oil storage for new arctic air base

Increased air traffic over the polar route has called for an immense new airfield and oil-piping system at Frobisher Bay, Baffin Island, just completed by Foundation Company of Canada Limited.

Tankers pump petroleum products through a 600-foot Thermoid-Quaker Floater Hose assembly to a 15,000-foot pipeline feeding the huge tank farm at Frobisher. An 8" Thermoid-Quaker discharge hose is floated on special inflatable Thermoid-Quaker pontoons and reeled on a power winch. This three-part rig makes up the complete Thermoid-Quaker assembly.

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What's New

IN PIPELINES

A bright and diversified future is seen for pipelining by W. S. Spangler, vice-president, Humble Pipe Line Co.

The next decade might see large-scale transportation by pipeline of coal, gilsonite, sulfur—and possibly even grain, wood chips, and salt, according to Spangler.

He made his predictions at a recent meeting of the Southwest Transportation Assn. of America, in Dallas.

He also predicted an increase in direct pipeline links to airfields, and pipelines running directly to "major wholesale outlets."

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A new research program aimed at reducing marine transportation costs has just been launched by Esso Research & Engineering Co., together with 19 other affiliates of Standard Oil Co. (N.J.)

First target will be tanker corrosion, which costs the companies $20-million a year.

Total yearly marine transportation bill of the Jersey companies is $400-million.

Another aim of the coordinated program will be the development of new piping and insulation materials, and of new automation techniques for tanker loading and unloading.

•

Two more supertankers were launched recently, both in Europe.

The bigger of the two is the 42,400-ton Trinity Challenger, which was built in Sweden for Trinity Navigation Co., of New York.

The other vessel, of 35,550 tons, was built in Holland for Esso Nederland N. V., an affiliate of Standard Oil Co. (N.J.).

•

New petroleum products terminals will be built at Phoenix and Tucson, Ariz., by Continental Oil Co. and Wilshire Oil Co.

The Phoenix terminal will have a capacity of 106,000 bbl. and cost $370,000. The Tucson facility will have a capacity of 70,000 bbl. and cost $346,000.

•

Natural gas rate hikes totaling $23.5-million sought by four subsidiaries of Columbia Gas System, Inc., have been suspended by the Federal Power Commission, pending a hearing.

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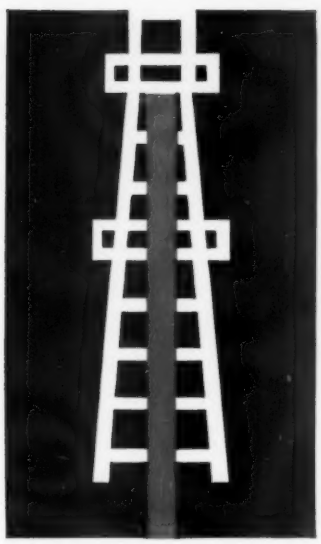

In the Petroleum Industry the IBM 1620 solves problems like these:

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- *design calculations*

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Pauley Details Operations in Mexico

Pauley Petroleum, Inc., last week disclosed for the first time the full terms, and results to date, under three contracts it now holds for exploration and production in Mexico.

The contracts, covering specific areas, are among several granted about ten years ago to various foreign oil firms by Pemex, Mexico's national oil agency.

Since then, little information has been given on the status of operations under the pacts, either by Pemex or the participating private companies, who deliver production to Pemex for cash payments.

In its first annual report, Pauley Petroleum says it now has three wholly owned companies operating in Mexico under contracts originally granted in 1949 and 1950 to predecessors.

One is Pauley Pan American Petroleum Co., which became a wholly owned subsidiary in September 1958, when properties of Edwin W. Pauley and other stockholders were taken over.

The other two are wholly owned subsidiaries of Pauley Pan American Mexofina S.A. de C.V.; and American Independent Oil Co. de Mexico S.A. de C.V., which was purchased in June of this year.

Oil and gas production has been established under all three contracts. The report lists them as follows without indicating other participants, who share some interests:

- **Northeast Mexico Contract:** specified areas in the states of Tamaulipas and Nuevo Leon. (Gas production from this area has been flowing into the U.S. to New York for two years.)
- **Tidelands Contract:** areas offshore in the Bay of Campeche, where Pauley this summer made what it considers a "very significant" new offshore oil discovery at Santanam.
- **Uplands Contract:** areas of the Isthmus of Tehuantepec in the southern states of Tabasco and Vera Cruz, where Pauley has established "sizable" reserves of gas. Only a limited local market exists for the gas at present, but a major outlet will be opened in March, 1961, when Pemex completes a 24-in. gas line to Mexico City, the report notes.

The companies receive payment in dollars from Pemex, the total covers expenditures plus compensation, and varies from 65% to 73¼% of the value of oil and gas produced and sold during periods specified in each contract.

All expenditures, including unproductive costs, are recoverable out of 50% to 55% of the total. The remaining 15% to 18¼%, payable as "compensation," is the profit.

Cut-off dates for recoverable expenditures are between 1961 and 1964 under the three contracts. Compensation, however, will be payable until 1974 and 1975.

Pauley estimates that reserves of oil and gas it has discovered are "more than adequate" to liquidate all accumulated expenditures, which it calls "reimbursables."

Since 1949-50, Pemex has reimbursed $17.7-million for expenditures under the three contracts—out of an accumulated total of $31.5-million.

Here's the status of the reimbursable expenditures under each contract as of Aug. 31 (in millions of dollars):

Contract	Total	Unrecovered Total	Unrecovered Pauley Share
Uplands	$ 5.5	$5.5	$3.2
Tidelands	12.3	6.3	4.5
Northeast	13.6	2.0	2.0

Pauley foresees a big boost in its Mexican oil output next year through development of its promising offshore Santana discovery.

Early in 1960 Pauley will be ready to start production from the two Santana wells completed so far. This alone can double its oil output, the company estimates.

For the fiscal year ended Aug. 31, its net production was 579,836 bbl. of oil and 13.6-billion cu. ft. of gas. Both represent increases over the previous 12 months.

Meanwhile, the company is continuing its plans for a fast-paced development program involving four more rigs—two land-based for directional drilling from shore and two offshore drilling barges (PW—Aug.21 '59,p45). The program has been considerably delayed, the company reports, by severe storms.

The Santana discovery well was brought in about 1 mi. offshore in the Bay of Campeche, some 43 mi. east of Coatzacoalcos, in June. A second well was completed in August. Both penetrated multiple sections of Miocene sands and were dually completed. Indicated test rates were 1,684 b/d in the first well and 2,340 b/d in the second. The oil is 38-gravity.

Four out of seven additional offshore tests drilled by Pauley during the year also found production, in Gulf of Mexico waters north of Santana.

Three were oil wells that are now producing a total of 650 b/d adjoining onshore production in the Rabon Grande area. The fourth was a gas well (now shut in) in the Tortuguero area, where three dry holes were also drilled.

Venezuela Readies Services Plan

CARACAS—Oil companies are expecting the government to present concrete plans this week for an official takeover of social services they now supply to oil workers.

This will clear the way for further bargaining on union demands for a new oil labor contract. The companies have refused to make a second set of counter proposals until the government's plans for the social service takeover were far enough advanced to permit estimating the cost to oil companies.

The government takeover would involve four services—schools, medical, housing, and commissaries—according to plans that were being readied last week by an interministerial commission.

Under these plans, the companies would turn over to the government the actual physical facilities, such as houses and schools.

In addition, several thousand oil company employes—including school teachers, medical personnel, housing maintenance crews, and commissary workers—would be transferred to government payrolls.

The companies would continue to contribute to the government's administration of these services an amount equal to their present cost to the companies.

Although oil workers have demanded further expansion of such services, the plan would, in the long run, eliminate a costly group of fringe benefits from collective bargaining.

NEW BRUNSWICK'S FIRST MAJOR OIL REFINERY

Irving Refining Limited will soon be manufacturing a complete line of petroleum products in New Brunswick's first major refinery.

Located at Saint John, the new 40,000-barrel plant will serve Irving markets in New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island and Quebec. The Irving Refinery will contribute substantially to the growth and development of Eastern Canada by increasing employment, expanding service to existing industries and helping to attract new ones.

Major process units were designed and constructed by Canadian Bechtel Limited, working closely with Irving Refining's engineers.

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Egypt Speeds Oil Plans

(An Interview by PETROLEUM WEEK*'s Middle East Bureau Chief)*

CAIRO—The state-owned General Petroleum Co. is doubling its budget for 1960 to step up exploration while it also starts production, managing director Dr. Mohammed Ahmed Selim told Petroleum Week in Cairo last week.

Under a 1960 operating budget of $11.2-million, he disclosed, GPC will extend its wildcatting to new areas and also put a big push into field work on its 63 licenses. Most of these areas, granted in 1957, are strung along both shores of the Gulf of Suez (a few completely offshore), with 11 in northern Sinai.

So far, the two-year-old government company has completed 12 producing wells at its Ras Bakr field and five at Karim (map), with test rates averaging over 800 b/d apiece. Both fields were discovered in 1958 in the Eastern Desert, near the declining Ras Gharib field (about 19,500 b/d in 1958) of Anglo-Egyptian Oilfields, Ltd., a Shell-British Petroleum affiliate.

"When we started out in 1957, we expected results—but not this good," Dr. Selim says. "Of course, we can't compare with the Persian Gulf or Libya. But for Egypt, this is better than we hoped for." Further, he adds, "Our prospects look even better on the basis of gravity meter and seismograph readings."

Production is now slated to start Jan. 31 at Ras Bakr and Karim. It will average a total of 10,000 b/d for the first year, Dr. Selim says.

GPC is continuing development drilling with two rigs—one at each field. A third will go into operation at Ras Bakr in a few weeks. One of the rigs, with crew, is on contract from AEO. The other two were acquired from Alfred Wirth & Co., of West Germany.

In the 12 Ras Bakr wells completed so far, individual test rates ranged from 6 to 520 metric tons daily of 22-23-gravity crude through 10-mm. choke, Dr. Selim says. This is an average of 118 tons daily, or roughly 810 b/d.

In the five Karim wells, the test rates ranged from 40 to 400 metric tons of 17-18-gravity crude daily, an average of 124 tons, or roughly 825 b/d.

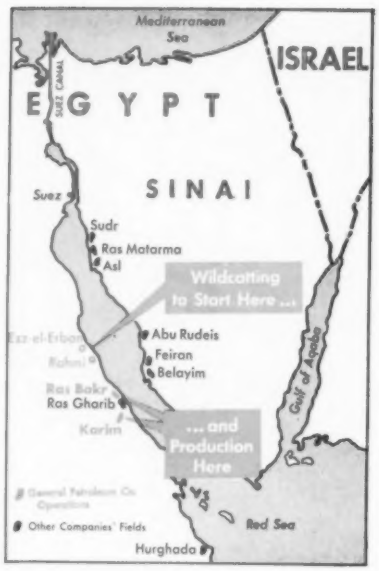
Crude will be stored at AEO's Ras Gharib gathering center on the gulf, and shipped from these to either of the two Suez refineries. One is owned by the government, the other by AEO.

Refining of Ras Bakr and Karim crude at Suez presents no problem —unlike the sour, salty Belayim crude in Sinai, which has to be exported. (Belayim, now Egypt's biggest producing field, is held by COPE, a company owned 49% by the government, with the other 51% controlled jointly by Petrofina and Italy's ENI.)

Salt and sulfur content of Ras Bakr and Karim crude is even lower than that of AEO's Ras Gharib oil, which is processed at Suez, Dr. Selim says. The gravity ranges between 17 and 23 degrees, API, with an average of 21-22.

GPC plans wildcat drilling first at Rahmi and Ezz-el-Erban, north of present operations. Later, it will drill on the Sinai coast, Dr. Selim says. It has no immediate plans for offshore drilling, he added: "We have enough prospects onshore to keep us busy for some time."

To speed its drilling plans, GPC is acquiring four Russian turbodrill rigs under the Soviet economic and technical assistance loan to Cairo. The first two, with 10,000-ft. capacity, will go into operation next year—one in the first quarter, the other in the summer. The second two, which will have 16,000-ft. capacity, are to be delivered in 1961.



GPC expects to have seven field parties at work during 1960. "By 1961," says Dr. Selim, "we would like to have covered most of our concession area."

At present, GPC has two seismograph parties and one gravity meter crew in north Sinai. Recently, it acquired Soviet equipment for two more seismograph parties. And in the coming months, it expects to receive equipment for another gravity meter party and one magnetic survey crew.

Russians Sew Up Brazil Oil Deal

MOSCOW—The Soviet Union and Brazil will soon start working out details of Brazil's agreement to buy $20-million worth of Soviet oil and oil equipment in 1960, first year of a three-year trade pact concluded last week in Moscow.

The purchases will include refined products as well as crude and oil equipment. Altogether, they are to account for 80% of Soviet exports to Brazil under terms for the first year of the pact.

There was no indication given in Moscow whether Brazil has agreed to make additional oil industry purchases in 1961 and 1962.

The pact provides for trade exchanges totaling $214-million for the three years. For 1960, trade in each direction is fixed at $25-million. It will rise to $37-million in 1961 and to $45-million in 1962. Details of trade for those two years are to be worked out later.

The pact with Brazil represents the Soviet Union's second attempt to penetrate a major Latin American market by dangling offers of oil and oil equipment to oil-hungry countries that are short on hard currencies.

Argentina was the first. Just a year ago, it signed up for $100-million in credits for Soviet oil equipment, placing orders for $30-million worth initially for its oil development drive.

To sew up the new pact with Brazil—which does not have diplomatic relations with the Soviet Union —the Russians agreed to buy nearly $70-million worth of Brazilian coffee.

"That's even more coffee than the Russians are drinking today," commented one member of the Brazilian trade team that concluded the deal. The Russians further agreed not to re-export any coffee without Brazil's prior approval.

In 1960, the coffee sales will be $17-million, or 68% of Brazil's exports to Russia. They will account for 60% in the second year, and to 65% in the third.

What's New / AROUND THE WORLD

FRANCE—The Foreign Office says French imports of Soviet oil will remain at a slated 26,000 b/d in 1960, unchanged by a new trade pact that will boost Soviet-French trade volume for that year. The projected oil imports break down to: 14,000 b/d of crude; 5,000 b/d of fuel oil; 5,000 b/d of gas oil; and 2,000 b/d of gasoline.

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QATAR—Shell will try again, after a three-year lapse, to find oil on its offshore Persian Gulf acreage. A new $5-million offshore platform is being rigged up 50 mi. off the Qatar coast for a 7,000-ft. test. Operations were suspended three years ago, after Shell had spent $21-million, when a storm wrecked its platform after a second dry hole (PW-Feb.1'57,p16).

•

GREECE—Esso will spend $6.4-million on exploration in western Greece under a new 50-50 pact signed last week. That's a minimum expenditure if operations are continued over the first eight years. If no discovery has been made by then, the entire area will revert to the government.

The acreage covers some 1,544 sq. mi. (1) near the islands of Paxi and Zakynthos, off the southwestern coast; and (2) near Killini and Pylos, in western Peloponniesia. The Greek Parliament must still ratify the agreement with Esso Hellenic, Inc., a Standard Oil Co. (N.J.) subsidiary.

•

FRANCE—The government estimates oil demand will increase 54% by 1965, at which time oil will meet 32% of France's climbing energy needs. Coal's share will drop from 61% in 1958 to 50% in 1965.

Industry Minister Jean-Marcel Jeanneney told the Chamber of Deputies that energy needs will rise 29%, from 122-million metric tons of coal equivalent in 1959 to 157-million in 1965. He also estimated that oil consumption would climb from 33-million tons of coal equivalent in 1958 to 51-million in 1965.

•

PAKISTAN—Prospects for a new commercial oil area at Karsal dimmed slightly last week when No. 3 Karsal (PW—Oct.23'59,p45) failed to produce at the expected rate.

The test, a joint operation of Pakistan Petroleum and Pakistan Oilfields, will be given further acid treatment in hopes of boosting production back to the 1,300 b/d initial flow.

•

UNITED KINGDOM—Shell will ship its second British-built offshore platform to Venezuela's Lake Maracaibo, early next year. De Long, Ltd., was the principal contractor for the $1.4-million "Triton." Its four 200-ft. retractable legs make the unit suitable for drilling in 120 ft. of water.

•

GERMANY—Caltex has expanded its marketing operations in Western Germany by purchasing the remaining 50% of its local sales affiliate, Caltex Tank-Kraft Mineraloel GmbH. Caltex bought out Union Rheinische Braunkohle Kraftstoff AG, of Wesseling, and Braunkohle-Benzin AG, of Berlin.

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AUSTRIA—Hungary has turned to Rumania for technical help in developing its crude deposits. Local Hungarian oil men lacked experience in handling the asphaltic, sour crude of the Nagylengyel field, so they asked for Rumanian help. A plan to raise the field's yield and still stay within safe operational limits is now under study by both governments.

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UNITED KINGDOM—The 1959 edition of "Oil & Petroleum Year Book" is now available. Copies of this directory of world oil companies may be obtained for $7 from Skinner, 20 Copthall Ave., London E.C. 2.

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SAUDI ARABIA—Crude output reached a new record in November at 1,210,299 b/d, edging over the previous high, set in July, 1957.

•

AUSTRALIA—Only one block of Queensland acreage remains unleased now that a 12-million-acre grant has been made to Nortex Oil & Gas, Dallas.

The new concession, first in Australia for the Texas independent, borders the northeast seacoast and extends south to Maryborough, just north of Brisbane. Nortex Australian Oils, an affiliate, expects to begin exploration next month.

•

Wildcats in the News

VENEZUELA—Superior Oil has failed to find commercial production in Lake Maracaibo's deepest test. The company had hoped to establish the lake's first production from the Cretaceous basement limestone. The wildcat, Agua 139-1, was drilled to 16,402 ft. on Creole's 3,700-acre concession in the northwestern part of the Lake. Superior holds a farmout on formations below the Eocene. The test found water-free oil, but not in commercial quantities.

LIBYA—Esso's second prolific horizon at Zelten, in central Libya, was finally tested after water, which plagued earlier tests, was plugged off. Oil from a 5-ft. section in No. 3 Zelten flowed at the rate of 1,600 b/d. The 38-gravity crude comes from a pay more than 2,000 ft. below the Paleocene limestone section of the first two Zelten wells.

ARGENTINA—YPF, government oil company, reports a new discovery on the south flank area of Comodoro Rivadavia field. The O-147 flowed at the rate of 378 b/d from a pay topped at 4,608 ft. YPF says the discovery points up the importance of the area, where two U.S. companies Southwestern Drilling and Kerr-McGee, and Saipem, an affiliate of Italy's ENI, started drilling recently.

LIBYA—Oasis Oil has spudded its third test on acreage just south of Libya's three biggest discoveries. The C-1-59 is 4½ mi. south of Caltex's Beda discovery. The two earlier tests on the acreage were further East, south of Esso's Zelten and Mobil's Amal, respectively.

PAPUA—The first shows since those in No. 1 Puri, last year, were reported by Australasian Petroleum, which is owned 45% by Stanvac, 45% by BP, and 10% by Oil Search, Ltd., an Australian firm. Two good shows of dry gas were found on drillstem test below 3,400 ft. in No. 1 Bwata, 60 mi. inland from the Gulf of Papua and 10 mi. from the Puri find, which proved noncommercial.

DEPT/Service & Equipment Companies

THOMAS C. JONES will become president of Nalco Chemical Co., Chicago, on Jan. 1. He succeeds **Joseph A. Holmes**, who becomes vice-chairman. Jones has been a member of the Nalco board since 1953, and a member of its executive committee since 1954. He is manager of the Chicago district of Aluminum Co. of America.

H. R. Wells

T. C. Jones

H. R. WELLS has been elected executive vice-president of production and properties for Milwhite Mud Sales Co., Houston. He is also a director of the company. Wells formerly served as assistant to the chief engineer of Mississippi River Fuel Corp., Milwhite's parent; as vice-president of Mobar Corp., formerly the production division of Milwhite; and as vice-president of Milwhite.

R. E. DAME has been appointed salesman for Jones & Laughlin Supply Division at Edmonton, Alta. Dame, with J&L since 1958, recently graduated from the division's sales training program.

MERRILL D. LOUK becomes a sales representative in Walworth Co.'s Los Angeles division. Louk's territory includes parts of California, Nevada, and Arizona. He has previously been employed as an oil and gas engineer for Hancock Oil Co. and as a gas engineer for Lomita Gasoline Co.

HOWARD F. WOLFE has been named district sales manager at the new Detroit sales office of Aetna Ball & Roller Bearing Co. Wolfe was formerly associated with S. T. Keller Co., which represented Aetna in the Michigan area.

VERN I. McCARTHY, JR., has been named president and a director of Vulcan Containers, Inc., Bellwood (Ill.) manufacturer of steel shipping containers. He succeeds his father, who moves up to chairman. The new president was formerly vice-president of marketing and director of sales. The company manufactures containers for chemicals, petroleum, food, paint, soaps, waxes, adhesives, and printing inks.

ORVILLE ZICKEFOOSE has joined the sales and service department of Hardy-Griffin Engineering Corp., in the Midland (Tex.) area. He has been associated with Fluid Packed Pump Co. and Stanolind Oil & Gas Co. (now Pan American Petroleum Corp.).

BURTON M. JOSEPH moves up from assistant general sales manager to general sales manager for Solar Chicago, division of U.S. Industries, Inc. He joined the division 3½ years ago as a sales engineer.

J. E. (Ed) BYERS has been appointed regional sales manager for the Gulf and Pacific regions of Black, Sivalls & Bryson, Inc. He will direct activities of the Alice (Tex.), Houston, Los Angeles, and New Orleans oilfield sales districts. He was most recently Tulsa district sales manager for the oilfield equipment division.

GEORGE R. BROWN, executive vice-president of Brown & Root, Inc., Houston, has been elected a director of Lone Star Steel Co., Dallas. Brown is also president and a director of Joe D. Hughes, Inc., and vice-president and a director of Highland Oil Co., Southwestern Pipe, Inc., and Texas Railway Equipment Co., and is chairman of Texas Eastern Transmission Corp.

G. R. Brown

H. A. Tobey

HENRY A. TOBEY has been elected vice-president of manufacturing for the bearing and rock bit division of Timken Roller Bearing Co., Canton, Ohio. He succeeds **H. M. Richey**, who has retired. Tobey, with Timken since 1928, was named factory manager of the Canton and Gambrinus (Ohio) factories in 1954. He has been general factory manager since 1958.

R. C. Taylor

J. F. Clark

RUSSELL C. TAYLOR has been elected president, and **JAMES F. CLARK** chairman of the executive committee, of ACF Industries, Inc., New York. Clark has been president of ACF since 1954. Taylor, who has been an executive department vice-president and a director of American Can Co., is taking early retirement to join ACF. Clark has been an ACF director since 1952, and Taylor since 1956.

KENNETH L. PALMER is the new advertising manager of National Supply Co., Pittsburgh. Palmer, who joined National Supply in 1952, was promoted to assistant advertising manager in 1957. He succeeds **Allen P. Colby**, who has retired.

K. L. Palmer

R. S. Miller

ROBERT S. MILLER is the new manager of oilfield sales for Hercules Motors Corp., Canton, Ohio. Miller has been in sales and engineering positions for Buda engine distributors in California and for Lufkin Foundry & Machine Co. in the Mid-Continent area, the Rocky Mountain area, and the Central states.

KENNETH J. McDANIEL is the new president of Gardner-Denver do Brazil, S.A., subsidiary of Gardner-Denver Co., with headquarters in Rio de Janeiro. He was formerly secretary for the parent company. **A. G. Lindquist**, who has been vice-president and treasurer of the parent company since 1954, was elected its financial vice-president and secretary. **Robert H. Meystre** succeeds Lindquist as treasurer, and will also report to him. Meystre was formerly vice-president of Gorham Mfg. Co., Providence, R. I. **William Miller**, Gardner-Denver controller, will also report to the new financial vice-president.

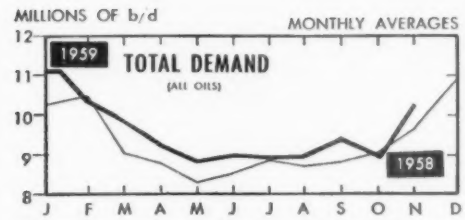
WILLIAM L. SAMMONS, general sales manager, and **RICHARD W. PEARCE**, works manager, have been elected vice-presidents of B-I-F Industries, Inc., Providence, R. I. Sammons joined B-I-F Industries as assistant to the president in 1957, and was appointed general sales manager this year. Pearce, with the company since 1936, worked in the machine shop, and in the estimating, production control, and sales departments, before his appointment as works manager in 1955.

HARRY K. ARMSTRONG has joined W. E. Stiles Engineering, Inc., Tulsa, as superintendent of production operations in the Oklahoma area. He was formerly superintendent of the Seminole district for Atlantic Refining Co.

ALEX MACKIE is manager of the new petroleum equipment engineering and services division of A. B. Chance Co., in Houston. He was formerly sales manager for the company's oil and gas industry products. Chance manufactures anchors for pipeline and production companies.

PETROLEUM WEEK'S

Fingertip Figures



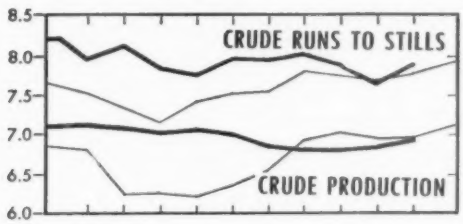
Figures for period ended December 11, except as noted

TOTAL DEMAND

Latest 4-week average	10.610
Year ago	10.111

DISTILLATE DEMAND

Latest 4-week average	2.962
Year ago	2.682

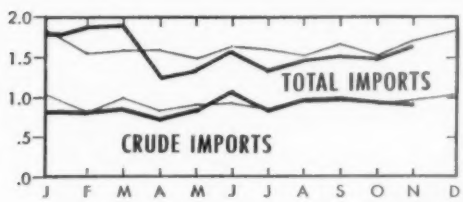


RUNS TO STILLS

Latest week	7.975
Previous week	7.026
Year ago	7.097

CRUDE PRODUCTION

Latest week	7.123
Previous week	7.983
Year ago	7.788

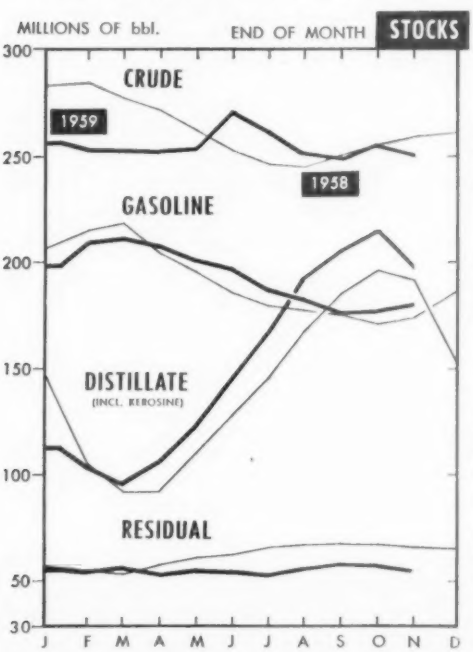


TOTAL IMPORTS

Latest week	1.738
Previous week	1.840
Year ago	1.641

CRUDE IMPORTS

Latest week	.910
Previous week	1.041
Year ago	.936



CRUDE STOCKS

Week-ended 12-5	252.6
Previous week	252.7
Year ago	257.0

GASOLINE

Latest week	181.3
Previous week	181.4
Year ago	174.7

DISTILLATES

Latest week	189.5
Previous week	194.4
Year ago	177.7

RESIDUAL

Latest week	63.9
Previous week	63.9
Year ago	62.8

The now expected level of total imports of crude and products indicates that domestic output of crude and natural gas liquids should average close to 8.2-million b/d in the first six months of next year.

That's based on the assumption that controlled and exempt imports for the period will amount to an average of 1,727,566 b/d (page 15), and that total demand will run about 10.1-million b/d.

The indicated level of total domestic production would represent a gain of almost 2% over the first half of 1959 and better than 5% over the average for the final six months of this year.

Of the estimated required domestic production to fill supply needs, crude output should account for nearly 7.3-million b/d.

The predicted crude production would compare with an average of 7,194,000 b/d in the first six months of 1959, and an average of 6,916,000 b/d now indicated for the last half of 1959.

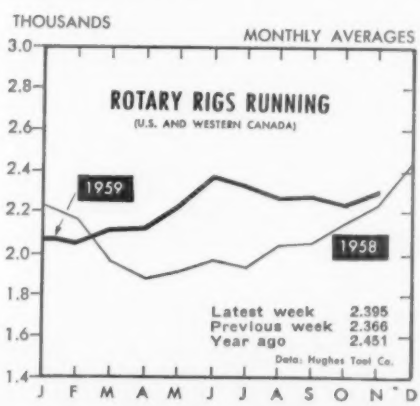
The estimated production, however, depends to a large degree on how well refiners and regulatory agencies adjust supply to meet the changing seasonal needs of the industry.

In the past, the general trend has been to over-produce in the late spring and early summer when demand is dropping.

And the overage has to be "made up" with sharp, and frequently economically painful, reductions later.

The output of natural gas liquids, estimated at about 900,000 b/d for the first half of next year, continues to grow at a faster rate than crude.

The estimate for next year places gas liquids production at 3.2% over the first half of 1959, compared with an expected rise of 1.4% for crude.



The Market Trend

Prices Are Moving in Seasonal Patterns

Criss-cross patterns are at work on prices these days. Mostly, it's a seasonal proposition. Gasoline is slipping a little. Heating oils and fuel oil look stronger in some areas.

Heating oil prices are moving up in the Gulf, but so are tanker rates to the East Coast. This will prove to be an interesting struggle. Gulf refiners are asking a minimum of 8.375¢ for No. 2 fuel. Tanker rates have pushed up to "plus 17½%" for clean voyages, which is over 1¢ a gal. for Gulf-New York. The New York contract cargo price is a maximum of 9¢. Something will have to give.

No. 6 fuel oil is ripe for a price increase all up and down the Mississippi Valley. Chicago prices are strong. Oklahoma refiners are asking 20¢ premium for low-sulfur material. A Gulf Coast refiner reports a futile search for $2.00 residual in his area to use for ships' bunkering.

Larger import quotas probably will prevent a big residual price hike on the East Coast. If Gulf Coast prices rise, however, it's not impossible for New York prices to get a hike via the Caribbean. A move in the Gulf on residual probably would find reflection in the Caribbean, even though the foreign prices are soft.

Gasoline prices seem to be sliding a little faster in the Upper Midwest than at the Gulf. Minneapolis/St. Paul prices slipped 0.25¢ last week. This move reflects q. t. offerings in Oklahoma of about 10.25¢ a gal. for regular, which are about 0.25¢ lower than previously.

There is some loose gasoline at the Gulf, but several refiners appear to be in good shape on gasoline into next year. An eastern major has quietly picked up four cargoes. On the other hand, West Coast buyers have backed away for the time being.

The hottest product right now is kerosine. Prices for kerosine in the Mid-Continent and at the Gulf easily could be bid up. The suppliers who won all the government jet fuel business earlier this year now find they are short. Louisiana refiners who operate on good kerosine crudes are sold out into next year.

A Wrangle In Ships' Sales:

There's a dog fight going on in the international bunkering trade. A week ago (PW—Dec.11'59,p56), one supplier offered sliding-scale discounts up to 5% to buyers who take more than 75,000 tons of fuel in 1960.

Last week, however, another international supplier offered a 5% discount, on all purchases, regardless of size. The sliding-scale discount benefits owners of fleets of about 10 or more vessels. The flat 5% benefits all shipowners.

Lube Prices Firm:

Lube prices are stronger. Last week, Pennsylvania cylinder oils were priced 1¢ to 2¢ higher. Also, offerings were light when Argentina came in the market. And none of the suppliers offered extended payment.

Crude Buyer:

Uruguay came in the market for 250,000 tons of crude for 1960—which means the nation is moving away from Russia. The country plans to halt Black Sea purchases, and buy from U.S. international sources.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of December 14

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- Gasoline, 98 oct prem....12.25-13
- Gasoline, 92 oct reg....11-11.5
- **Kerosine....9.25↑-10.375**
- Heating oil, No. 2....8.125-9.875
- Gas oil, 48-52 d.i....8.375-10.125
- Fuel oil, bunker "C"....$2.00-2.10

Caribbean, cargoes
- Avgas, Grade 100/130....14.75
- **Gasoline, 93 oct research prem....11↓-11.25**
- **Gasoline, 87 oct research reg....10.125↓-10.375**
- **Gasoline, 79 oct research....9.375↓-9.625**
- **Gasoline, 70-72 oct motor method....9.25↓-9.5**
- **Kerosine....8.875↑-9.25↑**
- **Heating oil, No. 2....8.125-8.375↑**
- **Gas oil, 48-52, d.i....8.375-8.625↑**
- Fuel oil, bunker "C"....$2.00

New York Harbor, barges
- Kerosine....9.6-10.1
- Heating oil, No. 2....9.1-9.6
- Fuel oil, No. 6....$2.37-2.47

Okla-Group 3, northern shpt., bulk
- **Gasoline, 91 oct reg....10.25↓-11.25**
- Kerosine....10.5-10.75
- Heating oil, No. 2....9.5
- Fuel oil, No. 6....$1.60-1.80

Chicago, bulk
- Gasoline, 91 oct reg....11.5-11.75
- Heating oil, No. 2....9.625-11.35
- Fuel oil, No. 6 high sulfur....7.4-7.5

Los Angeles, rack
- Gasoline, 88 oct reg....11.5-12.65
- Diesel fuel, PS 200....7.75-11.25
- Light fuel, PS 300....$2.80
- Heavy fuel, PS 400....$2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3....4.5
- FOB Breckenridge, Tex....4

LP-Gas
- Propane, Oklahoma (Group 3)....5
- Propane, Baton Rouge....5.625-5.875

Pennsylvania Lubes
- Bright stock, 25 p.t....23
- 200 vis. neutral, 25 p.t....25

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i....25-26
- Neutral, solvent, 200-210 vis....21.5-22.5

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i....25
- Neutral, solvent, 200 vis....21.5

Eastern Hemisphere

Singapore (Pulau Bukom), cargoes
- Avgas, grade 100/130....15.875
- Gasoline, 79 oct research....10
- Kerosine....10.125
- Gas oil. 48 d.i. minimum....9.625

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, (Okla.-Kan.), 36.0-36.9....$2.62-2.97
- North Dakota, 36.0-36.9....2.62-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9....2.92-3.22
  - West Texas, sweet, 36.0-36.9....3.00
  - West Texas, N.M., inter., 36.0-36.9....2.93
  - West Texas, N.M., sour, 32.0-32.9....2.71
  - East Texas, flat....3.05-3.25
  - Mirando, 28.0-28.9....3.31
- Illinois Basin, flat....3.00
- Pennsylvania Grade, Bradford dist., flat....4.40
- California, Signal Hill, 21.0-21.9....2.22-2.32†
- North Louisiana-Arkansas, 36.0-36.9....2.77-3.02
- Wyoming, sweet, 36.0-36.9....2.85-2.90
- Wyoming, sour, 32.0-32.9....2.63-2.71

Canada (flat prices, at the well)
- Pembina (Alta.)....$2.38
- Leduc-Woodbend (Alta.)....2.53
- Redwater (Alta.)....2.42
- Steelman A (Sask.)....2.435
- Virden (Man.)....2.31

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 47.0-47.9, Tucupido....$3.34
- San Joaquin, 41.0-41.9, Puerto la Cruz....3.10
- Oficina, 35.0-35.9, Puerto la Cruz....2.78-2.80
- Tia Juana, Medium, 26.0-26.9, Amuay....2.30
- Bachaquero, flat, Las Piedras....1.73-1.88
- Tarra, 38.0-38.9, San Lorenzo....2.83
- Lagunillas Heavy, flat, Cardon....2.10

†Differential per deg. of grav. varies.

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura....$1.90
- Safaniya, 27.0-27.9, Ras Tanura....1.50
- Iran, 34.0-34.9, Bandar Mashur....1.86
- Iran, 34.0-34.9, Abadan....1.81
- Iraq, 35.0-35.9, Fao....1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi....1.67
- Qatar, 41.0-41.9, Umm Said....2.05
- Neutral Zone, Burgham, 23.5-24.4, Mina Saud....1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud....1.38

Middle East, Eastern Mediterranean
- Arabian, 34.0-34.9, Sidon....$2.27
- Iraqi, 36.0-36.9, Tripoli, Banias....2.31

Far East, Cargoes FOB Lutong, Sarawak
- Seria Light, flat....$2.57

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- **U.S. Gulf-New York, clean (USMC+17½%) $3.35↑**
- **U.S. Gulf-New York, dirty (USMC—10%) $2.56↑**
- NWI-USNH, dirty....(USMC)—40%) $1.65
- NWI-UK/Cont., dirty....(Scale—45%) 17/10*
- Persian Gulf-UK/Cont., dirty...(Scale—48¾%) 24/11*
- **Persian Gulf-USNH, dirty (USMC—65%) $4.45↑**

**Sterling.*

Key to TBA Sales—More Lube Jobs

Sale of lubrication jobs can be the key to improved tire, battery, and accessory sales at service stations, said J. H. Flanagan, merchandise manager for motor oil and automotive lubricants for Standard Oil Co. (Ind.).

Flanagan told the Oil Industry TBA Group's annual meeting, in St. Louis last week, how lubrication service at the station "goes hand in hand with increasing sales of products other than gasoline."

Gasoline sales are helped, too, Flanagan said: "People who buy lubrication jobs will seldom, if ever, turn down a request to be permitted to fill up the gasoline tank."

Opportunities for TBA sales abound when motorists drive in for lubrication service, says Flanagan.

"When a customer buys a lube job, even though he leaves the car behind," says Flanagan, "a more leisurely contact is available, both when he leaves the car and when he picks it up.

"And customers who watch the lubrication job can always be shown any needs for tires, batteries, and accessories at the time they are discovered."

A survey of 40 service stations showed how great the correlation is between lube jobs and TBA sales.

By comparing the performance of 40 company-operated Indiana Standard service stations in the Midwest over a recent 12-month period, Flanagan found that the stations that were "good" in generating lube jobs also fared well in producing TBA sales.

The 20 "good" outlets surveyed, with an average of 9.14 lubrication jobs per 1,000 gal. of gasoline sold, consistently sold more TBA than the other 20 "mediocre" stations, which managed to service only 5.25 cars for every 1,000 gal. of gasoline sold.

On tire sales, for example, the "good" stations averaged 1.854 tires per 1,000 gal. of gasoline sold, compared to 1.349 for the "mediocre" group—37% more.

Comparisons of battery and accessory sales and income from service were equally impressive (table).

There has been little change in the benefits a station operator can derive through lubrication sales, says Flanagan, despite all the publicity about the so-called "lubeless chassis."

None of these chassis have appeared on any of the 1960 car models, says Flanagan. Moreover, he adds, centralized lubrication systems, intended to dispense a chassis lubricant from one small central reservoir to the various chassis lubrication points, "do not seem to have caught on to the degree the producers of such devices had hoped."

"We can conclude, therefore," says Flanagan, "that little change in the potential for sales of chassis lubrication jobs is apt to occur in the next five to seven years."

And even if the "lubeless chassis" do appear, says Flanagan, "we can count on a large potential for lubrication jobs sales for a long time to come."

How Lube Jobs Boost TBA Sales

	Sales per 1,000 gal. of gasoline	
	"Good" Outlets	"Mediocre" Outlets
Lube Jobs (no.)	**9.14**	**5.26**
Tire Casing Sales (no.)	1.854	1.349
Battery Sales (no.)	0.406	0.376
Accessory Sales ($)	28.91	17.51
Service Income ($)	31.99	18.74

STATIONS THAT ARE "GOOD" in generating lubrication jobs also rank high in TBA sales, according to a survey recently completed by Standard Oil Co. (Ind.)

TBA Divorcement Threatened

Rep. James Roosevelt is definitely expected to introduce legislation at the next session of Congress aimed at "divorcing" distribution of tires, batteries, and accessories from major oil companies.

That's the impression received by Washington observers who watched the congressman's three days of hearings last week on TBA distribution practices of major oil companies.

Roosevelt made it clear, throughout the hearings of his House small business subcommittee, that he is convinced that service station dealers are coerced into carrying TBA products distributed by their suppliers.

Roosevelt's concentration on TBA divorcement—as opposed to divorcing all marketing from integrated companies—represents a surprising tack in his investigations of oil marketing.

As recently as October, Roosevelt told jobbers at the Indiana Independent Marketers Assn. that "divorcement continues to be seriously considered" (PW—Oct.23'59,p38). But all who heard him express these remarks thought he was talking about divorcing the entire marketing function from integrated companies.

Despite Roosevelt's intentions to press for legislation on TBA distribution, such a law is not given much chance of reaching the House floor next year—much less of passing.

Roosevelt, who must introduce his legislation independently of his special subcommittee, will probably see his proposed bill turned over to the House Judiciary Committee.

Rep. Emanuel Celler (D., N.Y.), chairman of that committee, is not likely to rush the bill through, observers feel—even though he is no particular friend of the major oil companies.

Furthermore, House members will discourage any action on so controversial a measure as TBA divorcement during 1960—an election year. The hesitancy and cautious attitude of Roosevelt's own subcommittee members is a foretaste of the cautiousness with which other House members are expected to approach the issue.

One member of Roosevelt's subcommittee, Rep. Arch A. Moore, Jr. (R., W. Va.), noted that divesting the integrated oil companies of their TBA distribution may open the gates for automotive-supply wholesalers to dominate the market.

Oil suppliers will have an opportunity in January to counter the

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charges made against them last week by dealers and TBA wholesalers.

The January session, however, will be only the first of a long series of hearings that Roosevelt will extend throughout the congressional session. It is felt that Roosevelt will use these hearings to keep the idea of TBA divorcement before Congress, preventing it from becoming buried in the Judiciary Committee.

At last week's hearings, Roosevelt listened sympathetically as dealers and TBA distributors testified that suppliers coerced dealers into selling only the supplier-endorsed line of TBA products.

One Sinclair dealer from Atlanta, F. H. Thompson, actually produced a secretly recorded interview he had with Thomas J. Limpkin, a Sinclair salesman.

During the recorded interview Limpkin told Thompson: "They don't need no reason for canceling your lease. . . . All it says in there is that all they have to do is give 30 days' notice, or you give them 30 days' notice. All they want you to do is carry a complete line of Sinclair products."

A Sinclair spokesman testified that the events in this dealer-salesman interview "constituted a complete violation of company policy."

Roosevelt noted throughout the hearings that suppliers can force their TBA on dealers just by not cooperating with them when the dealers need their assistance.

For TBA, Women Prefer Stations

Women most often look to the service station when they need TBA items. That's the conclusion of Batten, Barton, Durstine & Osborn, from its recent survey of the automotive buying habits of 3,423 women.

When the advertising agency asked, "Where would you go first to buy TBA?" here's how the women answered:

	service station	auto-supply store
Tires	45%	23%
Batteries	46	31
Spark plugs	45	23
Antifreeze	72	12
Fan belts	56	17

BBDO found that "about one-fourth of the women drivers actually control the money spent for service and maintenance."

What's New / IN MARKETING

Texaco Canada Ltd. plans to build Canada's "first plant-manufactured, full-size, portable gasoline service stations."

The main feature of these stations is mobility. Within two hours they can be jacked off their foundations and made ready for shipment to another location, Texaco Canada says.

The units were designed and developed by Petro Canada, Ltd., and are being built by Canadian Vickers, Ltd., Montreal. The first one will be erected at Long Branch, Ont.

Texaco Inc. has no plans to use portable stations in this country, a spokesman reports.

However, at least two American major oil companies have indicated interest in skid-type stations by requesting information from A-1 Pump & Tank Co., a domestic manufacturer.

A-1 has already sold its portable units to jobbers in Texas, Alabama, and Louisiana.

•

In trucking, any attempt to cut costs on motor oil invariably results in added maintenance costs, according to results of a survey by Fleet Owner, a McGraw-Hill publication.

"It can mean shorter engine life between overhauls, which cuts down the productive output of a vehicle," the magazine reports this month.

In addition, longer oil drain periods can cause "greater oil and fuel consumption" and "greater damage happening to the engine parts."

The findings of the Fleet Owner survey confirm the results of a study made earlier this year by Standard Oil Co. (Ohio).

•

Service station dealers in New York City were defended last week against charges of adulterating product at their stations.

Alan L. Feinman, executive vice-president of the Inter-City Service Stations Assn. made the defense at a hearing before Anthony Mascarelli, Commissioner of Public Markets.

Mascarelli had summoned a group of New York City operators to his office on charges of varying degrees of infractions of the regulations of the Dept. of Markets.

•

Motorists in Europe will soon be putting Boron gasoline into their fuel tanks, if the plans of Standard Oil Co. (Ohio) materialize.

Charles E. Spahr, president of Sohio, told the New York Society of Security Analysts last week that "discussions under way at the present time with potential licenses may lead to licensing of Boron gasoline in Europe and in other parts of the world."

Sohio has already extended licenses to Richfield Oil Corp. (L.A.) and DX Sunray Oil Co. in this country and to Ampol Petroleum Ltd., in Australia.

•

Accurate estimates of the average number of miles a passenger car goes on a gallon of gasoline are expected from an Arizona Highway Dept. test.

This month, 1,000 Arizona highway department employes will keep a record of their gasoline purchases and speedometer readings.

The Highway Dept. plans to use the information to compute more accurate estimates of the state's total gasoline tax receipts, to judge what will be available for highway construction.

•

Signal Oil & Gas Co. will bring multigrade gasoline pumps to northern and central California during the first half of 1960.

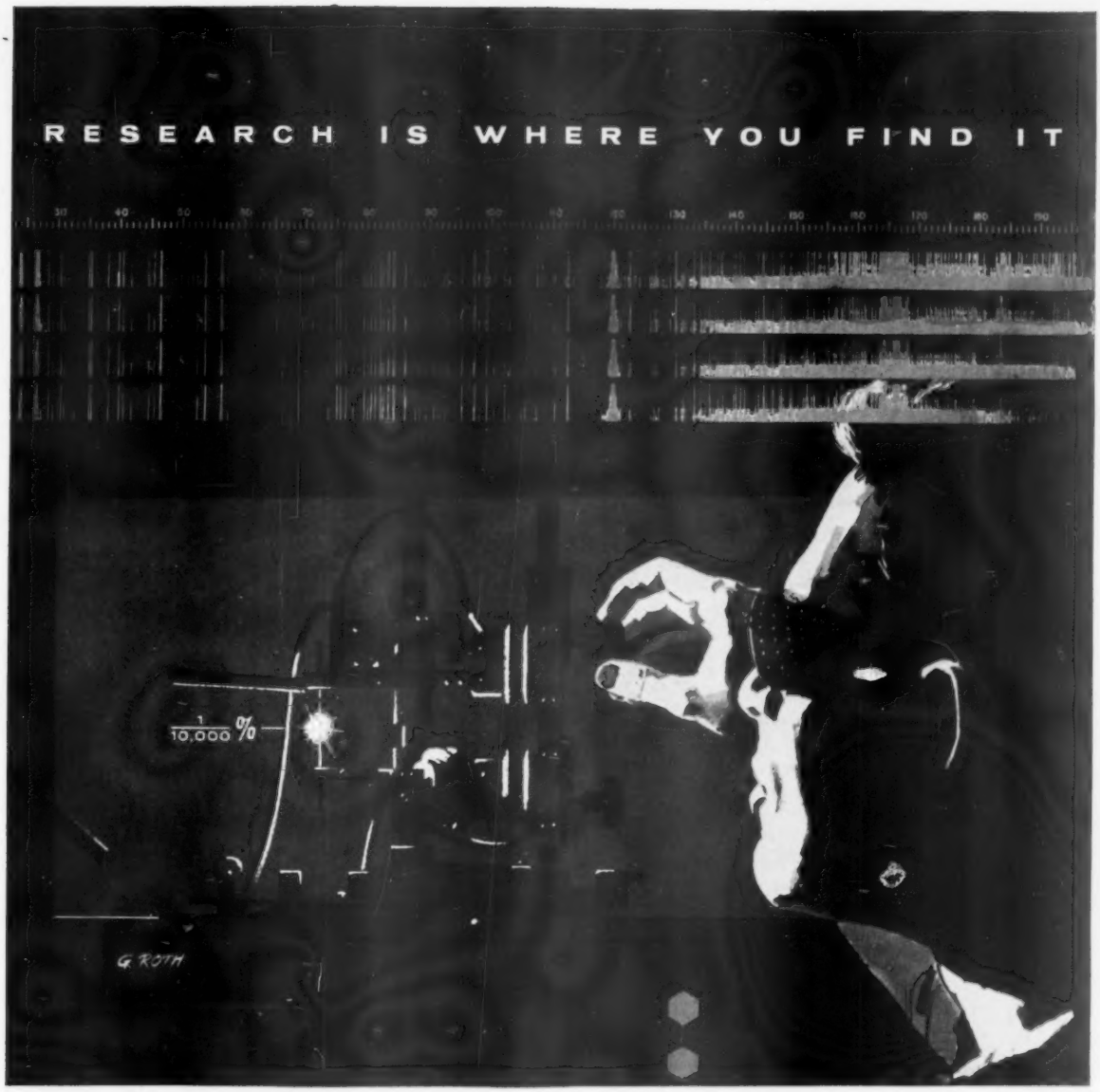
Signal introduced seven-grade pumps at its Hancock service stations in Las Vegas earlier this year. The company is using equipment manufactured by Wayne Pump Co., a division of Symington-Wayne Corp. The Wayne pumps mix premium and regular grade fuels in the nozzle of the hose.

•

Standard Oil Co. of California is demonstrating the performance of its motor oil to users with its "Labo-rama" —a traveling laboratory mounted in a 40-ft. truck trailer.

"Labo-rama" contains a portable indoor superhighway, on which Standard demonstrates, for example, how many miles a Jeep-type vehicle can travel on a cupful of gasoline using different motor oils.

The mobile lab is also equipped to test the operating characteristics of motor oil in hot and cold weather and in radioactive engines, in addition to showing how motor oil cuts friction.



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DEPT/Personals

R. M. NUGENT has joined Cosden Petroleum Corp., Big Spring, Tex., as assistant to the president. Nugent, with Magnolia Petroleum Co. in Texas for 22 years, was transferred to New York as chief geophysicist and staff advisor to the exploration manager of Mobil Oil Co. when Magnolia became a part of the Mobil organization recently. Before that, he was area geophysicist and staff advisor to the exploration vice-president at Magnolia's Dallas headquarters. In his new position, Nugent will be located at Big Spring.

J. McAfee

R. M. Nugent

DR. JERRY McAFEE, vice-president, manufacturing department, Gulf Oil Corp., Pittsburgh, has been elected president of the American Institute of Chemical Engineers. **John J. Healy, Jr.**, Monsanto Chemical Co., St. Louis, was elected vice-president. **J. Henry Rushton**, Purdue University, Lafayette, Ind., treasurer of the institute, and **Frank J. Van Antwerpen**, Nutley, N. J., executive secretary, were reelected. Officers were elected by mail ballot of the membership; the results were announced at the institute's annual meeting in San Francisco last week.

ROBERT M. SHEPARDSON becomes vice-president of Esso Export Corp., international marketing affiliate of Standard Oil Co. (N.J.), New York. He will serve as general manager of a new lubricants and specialties department being formed by Esso Export to assist Jersey Standard's overseas affiliates in the supply of lubricants and other specialty products. Shepardson, who joined Esso Standard Oil Co. in 1930, transferred to Esso Research & Engineering Co. in 1935 as deputy coordinator of petroleum products and medical research. He was assigned to Jersey Standard's marketing coordination department in 1956, and a year later was made manager of the marketing development division.

PAT H. CAIN, reserves engineer, and **WILLIAM C. COOLEY, JR.**, geologist, have joined the staff of the reserves and exploration department of Texas Gas Co., Houston. Before joining Texas Gas, Cain was associated with Standard Oil Co. of Texas, Tennessee Gas Transmission Co., H. Zinder & Associates, Halliburton Oil Well Cementing Co., and International Petroleum (Colombia), Ltd. Cooley was formerly with Gulf Oil Corp.

F. P. BURNS, C. E. HOLMES, and **REMICK McDOWELL** are new directors of Texoma Production Co., Chicago. Burns and Holmes are Texoma vice-presidents, and McDowell is the new president of the parent company, Peoples Gas Light & Coke Co. Burns has also been elected a director of another Peoples Gas subsidiary, Peoples Production Co.

JOHN C. TAGGART is the new manager of distributor sales for Sun Oil

1960 OFFICERS of the Interstate Oil Compact Commission, elected at its recent annual meeting in Philadelphia, are (l. to r.): **Warwick M. Downing**, chairman of the Colorado Oil & Gas Conservation Commission, first vice-chairman; **Gov. George Docking**, Kansas, chairman; **Lawrence R. Alley**, Oklahoma City, who was reelected executive secretary; and **Miss Genevieve Blatt**, Pennsylvania's Secretary of Internal Affairs, second vice-chairman. Gov. Docking replaces **Gov. J. Hugo Aronson**, Montana, for the one-year term. Downing succeeds **Z. Arthur Nevins**, Kansas, and Miss Blatt succeeds **Willson M. Laird**, North Dakota.

Co., in Philadelphia, and **Richard H. Sterling** succeeds him as manager of the Marcus Hook (Pa.) sales district. Sterling has been manager of retail sales in Sun's Middle Atlantic region since last year. Taggart, who has been with Sun since 1933, was appointed district sales manager at Willow Grove, Pa., in 1942. He became manager at Marcus Hook in 1955.

I. G. MORGAN has been elected vice-president in charge of domestic sales for Texaco Inc., New York. He has been general sales manager of the Pacific Coast region, in Los Angeles. Morgan, with Texaco's domestic sales department since 1931, was appointed manager of the Dallas division in 1947. He became assistant general manager in Los Angeles in 1953, and manager earlier this year.

I. G. Morgan

J. L. Kyser

JOHN L. KYSER moves up from assistant manager to manager of Phillips Petroleum Co.'s supply and transportation department, in Bartlesville, Okla. **Harry G. Fair** was manager until his recent election as vice-president of supply and transportation. Kyser joined Phillips in 1937, and held various assignments in the engineering and materials departments before transferring to the coordinating division of the supply and transportation department in 1944.

D. C. HEMSELL has been named assistant to **C. O. Stark,** vice-president of land and geology for Phillips Petroleum Co., in Bartlesville, Okla. **W. B. Weeks** succeeds Hemsell as manager of the land and geology department, and **E. Van den Bark,** formerly southwest regional manager, succeeds Weeks as assistant department manager. **A. J. Hintze,** director of exploration, continues in that position, and will take on new departmental management duties. **R. J. Haas,** southwest regional geologist, has been promoted to southwest regional manager. **T. H. Montgomery,** division manager at Layfayette, La., transfers to Bartlesville as southeast regional manager, succeeding **R. E. McPhail,** who becomes staff geologist there. **S. J. Talley,** divisional development geologist at Amarillo, becomes exploration geologist at Bartlesville for the southwest region, and **C. F. Lawrence,** development geologist at Midland, moves to Bartlesville as development geologist. In the Layfayette (La.) division office, **S. A. Spencer,** assistant manager and division exploration geologist, becomes division manager; **C. W. McBride,** division landman, also becomes assistant division manager; and **E. S. Hastings,** formerly a district exploration geologist, is the new division exploration geologist. **K. S. Blanchard,** division development geologist at Wichita Falls, Tex., transfers to Midland in the same capacity, and **K. M. Jastrow** moves up from assistant division landman to division landman at Midland. **L. G. Williams,** assistant manager and exploration geologist for the Evansville (Ind.) division, goes to Billings, Mont., as manager, and **M. A. Vaughan,** assistant division exploration geologist in Oklahoma City, succeeds Williams in Evansville. **B. S. Geho,** assistant division development geologist at Amarillo, moves up to division development geologist.

CAPT. C. H. GLENWRIGHT is the new marine agent at Port Arthur, Tex., for Gulf Oil Corp. He succeeds **W. M. Rouse,** who is retiring. Glenwright joined Gulf's marine department in 1930, and has been at the Port Arthur marine office since 1948.

BARNABAS B. HADFIELD is a new director of Tidewater Oil Co., Los Angeles, succeeding the late **Gordon B. Crary.** Hadfield is senior partner of Hecht, Hadfield, Farbach & McAlpin, New York law firm.

B. B. Hadfield

F. A. Davies

FRED A. DAVIES has been elected a director of Kern County Land Co., San Francisco. Davies recently retired as chairman and chief executive officer of Arabian American Oil Co., posts he had held from 1952. Davies also served as a director of Trans-Arabian Pipeline Co. from 1952 to 1959.

J. E. WOODWARD has been named superintendent of operations in Shell Oil Co.'s Houston area gas department. Woodward joined Shell in 1948 as a mechanical engineer.

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Coal Lobby Forced a Cut in Imports

THE COAL LOBBY last week succeeded in delaying the issuance of a presidential proclamation, an Interior Dept. order, and the operating schedules of numerous competitive oil companies.

The coal lobby dictated to the government and to the oil industry what the level of residual fuel oil imports should be for the first half of next year. Interior officials concerned with the mandatory control program had recommended that the maximum allocation for residual fuel be raised by about 100,000 b/d.

But after a meeting of the coal lobby with the Secretary of the Interior—a meeting arranged by a coal state senator—the issuance of the new import allocations was held up a week, and the increase in resid allocations was trimmed to 62,000 b/d.

Such actions represent the lowest form of political pacification of a pressure group.

The success of the coal lobby's move speaks significantly of its growing strength on the Washington scene.

The coal lobby—known as the National Coal Policy Conference—that dictated to the government and the oil industry on import allocations is the same group that is urging a so-called National Fuels Policy. And a National Fuels Policy is a fancy name for end-use controls over competing forms of energy.

THERE IS LITTLE QUESTION but what the coal lobby group is really seeking is a supported price for coal. George A. Lamb, manager of business surveys for Consolidation Coal Co., made that point before the congressional Joint Economic Committee's sub-committee on energy resources in October.

He said: "Effects of 'dumping' of residual imports into the coal market are twofold: Coal loses tonnage, and its price structure is weakened. The tonnage loss is not large compared to national figures—probably 5-million tons in the last year. . ."

In other words, he admitted that the potential market coal could hope to recapture is small—but that the price coal could hope to recapture through end-use controls would be significant.

Such controls would lead to coal's determining the price of residual fuel oil, home heating oils, and natural gas—a move designed to support the price of coal.

AT THE SAME HEARING, Joseph E. Moody, president of the National Coal Policy Conference, said: "I would like to go on record right now as saying that the coal industry does not and will not encourage unnecessary government interference with free enterprise in any way." Presumably then, the coal lobby felt that last week's interference in the import quotas was necessary.

Most likely under a National Fuels Policy, a lot of interference would also be found to be necessary to protect coal.

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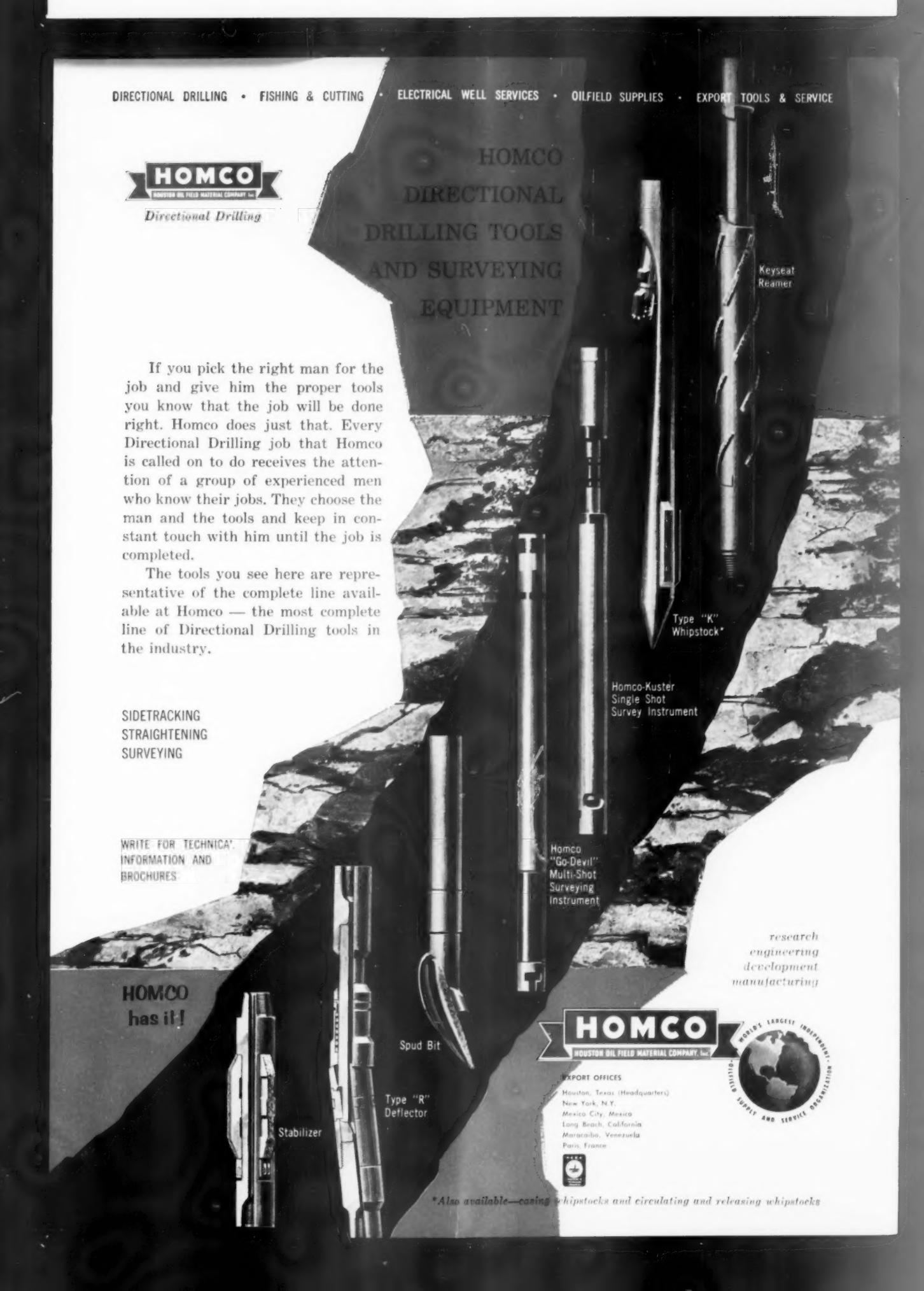

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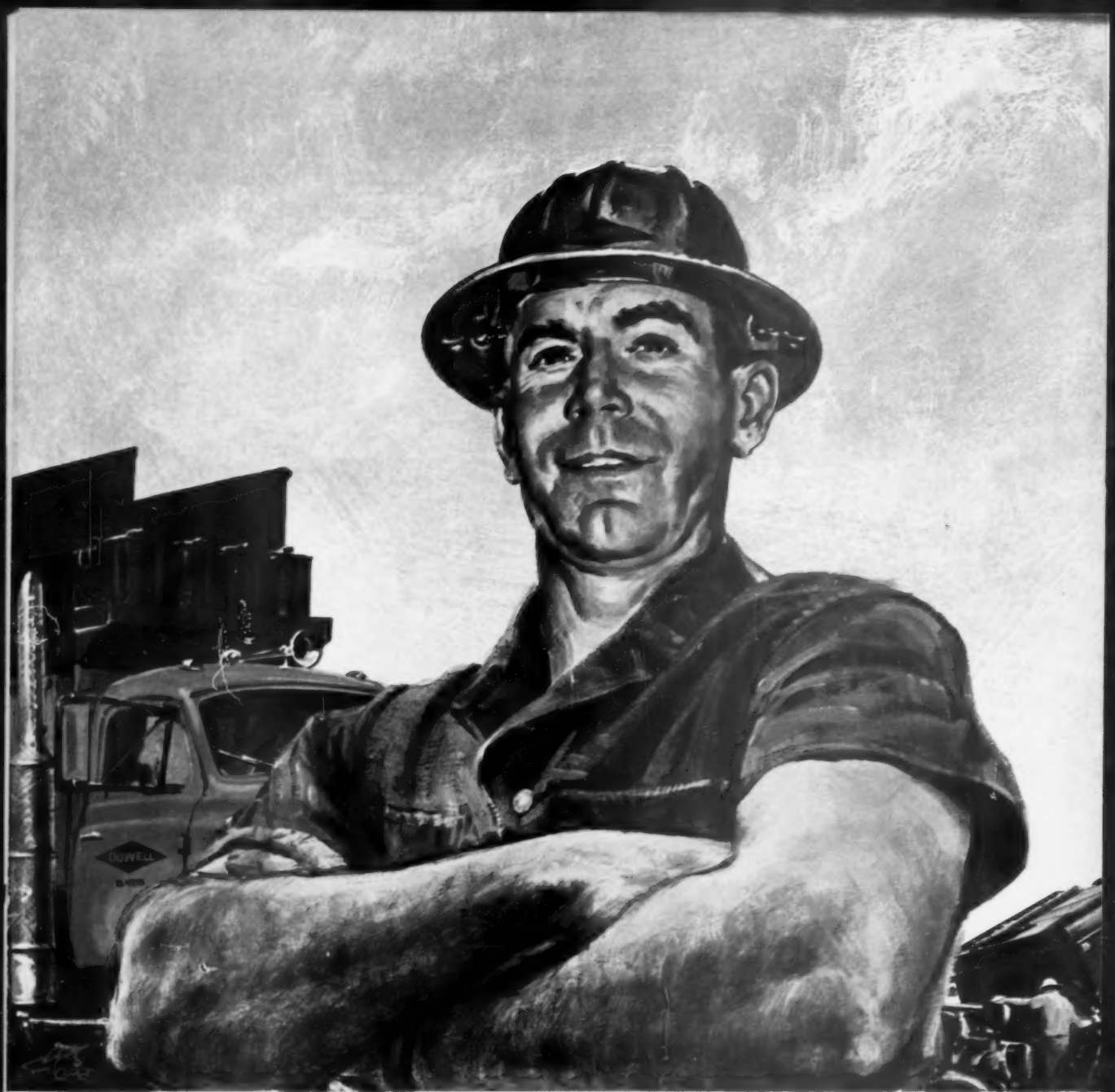

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